Railway Age

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Highway Crossing Signals in the Empire State

THE state of New York, by adopting a standard for automatic flashing light signals, has brought about an important forward step in highway crossing safety. The order of the Public Service Commission issued last June (*Railway Age*, June 13, page 1490) has been followed by a large number of applications from railroads for authority to instal these signals, conforming to the A. R. A. standards and to the Commission's requirements. Many of these applications refer to crossings which were regularly attended by flagmen for a part of the 24 hours of each day and, of course, the saving to the railroad is a very sizable annual sum. This action of the railroads is also significant as related to the attitude of cities and towns, for dismissal of crossing attendants must in all cases have had their approval. It means that municipal authorities have at last come to recognize the fact that a crossing is safer with an automatic signal than with the human attendant without the signal. This is true, no doubt, even when the comparison is with a crossing which is attended all day and all night, though even railroad officers have been slow to realize this. This New York state movement merits the careful attention of railroad managers and state authorities everywhere. The division of the first cost continues to be an important point. A railroad which can save $1,000 a year by doing away with a watchman is likely to be very easy with the cities and towns, especially as this is a time-honored method of appeasing their inveterate desire to get something out of the railroad; but the fact remains, as stated by the railroads' spokesman at the Albany hearing, that the municipality ought to bear a part of crossing protection. This feature becomes of more consequence when, as called for by the New York order, the automatic signal is set in the middle of the highway; and when a considerable sum —say $500 to $1,500—must be spent in widening the roadway for automobiles to run around the signal. The report and discussions at the Signal Section meeting last week indicate that sentiment in favor of the middle-of-the-road signal is not yet unanimous, and the results of experience with such signals in New York and elsewhere will be watched with particular interest.

Almost 100 Per Cent Service

THE achievement of the railways in handling for over two years a large and at times record breaking freight business, and throughout this time maintaining substantial and usually large surpluses of freight cars, has been widely commented upon as a striking reflection of the increase that has been effected in the efficiency of their operation. The most remarkable freight car figures reported thus far during 1925, however, have not been those regarding car surpluses, but those regarding car shortage. There has been a large net surplus throughout the year. In the past, however, no matter how large a surplus has been reported, there almost always have been shortages reported here and there. There are about two and one-half million freight cars, and they must be distributed for loading among all the communities on railway lines, and it is almost impracticable so to distribute them that every shipper will on every day have all the cars that he has asked for placed at his disposal on that day. And yet there actually have been three weeks in the present year in every day of which every shipper in the United States was supplied with every car he wanted, and the average daily number of unfilled requisitions of shippers for cars has been reduced so low that it may almost be said that in supplying shippers with cars the railways have rendered perfect service. In 1920 the average daily car shortage reported was 81,592 cars. In 1921, when there was a huge slump in business, there were large surpluses of cars throughout the year, and the average daily shortage reported was only 1,454. In 1922, in the latter half of which occurred the shop employees strike and the resumption of bituminous mining after a five months strike the average daily shortage reported was 47,881. In 1923 the average daily shortage reported was 29,216, in 1924 it was only 1,047, while in the first eight months of 1925 it was only 123; and in the weeks ended February 22, June 22 and July 14 no failures whatever to fill shippers' requisitions for cars were reported. The average number of cars loaded with freight daily in the first eight months of the year was 138,634, and therefore the average daily shortage reported was less than one-tenth of one per cent of the number of cars actually asked for by shippers. In other words, over 99.9 per cent of the cars that shippers ordered were furnished to them when and where they were wanted. If any other industry can show a better record of giving its customers what they want when they want it, let it speak up!

Is the Railway Industry Competitive?

IS there competition in the railway industry? This is an elementary question, so elementary that most persons will wonder why one should ask it. What makes the question a valid one is that people will answer it so differently. The railway man—be he an executive or some one in the ranks—will say that of course there is competition. There may or may not be competition in rates, he will say, but there certainly is competition as relates to service, and rivalry as relates to operating performance. He knows that such competition exists because he finds out that as soon as there is lessening excellence of performance, his fellows on neighboring roads come in and get the business. Now, on the other hand, it happens that much of the economic thought on the subject of railway transportation is guided by the articles and books published by the economists who, of course, get rather the point of view of the theoretical side than of the practical. It seems to be one of the commonplace beliefs of too many of the theoretical economists that there is no competition in the

railway industry. Some go so far as to express regret of that fact and point out that inasmuch as "competition is the life of trade" the railway industry, being a monopoly and suffering from lack of competition, approaches somewhat the status of government with its bureaucracy, its failure to show initiative, etc. At the present time there are many kinds of competition in the railway industry. First, there is the elementary problem of getting the business. There are also the broader aspects of railway strategy. Notice the rivalry between carriers relative to consolidation. Several systems, it will be remembered, competed for the Buffalo, Rochester & Pittsburgh, so much so that Mr. Loree had to pay a high price for its acquisition. There seems to have been something like competition relative to Mr. Loree's other proposal to build the New York, Pittsburgh & Chicago across Pennsylvania. Several roads seem to be showing a rather bitter rivalry as to extensions of lines into western Texas and the Northern Pacific and Great Northern do not seem to be able to agree with the Southern Pacific as to who should build new lines into Oregon. We in the railway field speak of the extension of lines into new territory. Are they different from the broadening out of a commercial concern into new markets? And, finally, there is the truck and motor bus. These several factors seem sufficient to indicate that such of the theoretical economists as have not realized the existence of such factors should cease believing that the railway industry is non-competitive. But there is more to it than that. Do all the railway men realize how competitive is their own industry? The unsuccessful manner in which most railroads have thus far met motor bus or motor truck competition leads one sometimes to wonder. There is need for some thinking by both the theoretical and the practical man about these things.

The Western Press and the Rate Case

REGULATION determines what net return the railways may earn and in the long run public sentiment mainly determines regulation. The attitude of the press in a large measure both reflects and molds public sentiment. The attitude of the western newspapers toward the proposed advance in western freight rates is therefore both interesting and significant.

Newspapers both large and small reported the testimony of the railroad witnesses more fully and accurately than the testimony given in any such proceeding ever was reported before. This shows the general public was interested in what the railroad witnesses had to say and that the press was willing to carry their message to the people.

For many years the prevailing sentiment in the west toward the railways has been one of suspicion and hostility. We have got and read hundreds of editorials regarding the rate case that have been published in newspapers throughout western territory, and what has been said indicates, first, that sentiment in the west toward the railways is more friendly than formerly, and secondly that there still exists enough uneducated and unfriendly sentiment to justify real concern as to the future of railway regulation. There is no better judge of sentiment in the Middle West than Senator Arthur Capper of Kansas. In an interview published in the Chicago Tribune on September 27 Senator Capper said: "There is not the hostility against the railroads that there was a few years ago. The roads in our particular section are prosperous but we do not feel that they are making too much money. We are against the horizontal increase in rates and will favor the readjustment of the rate structure on the lines of the Hoch-Smith resolution giving lower rates to the basic commodities."

Most of the western newspapers, while reporting the railroad testimony in their news columns, have refrained from expressing opinions regarding the merits of the case in their editorials. Not a few, however, of the leading papers, especially in the large cities, have said they favor the advance in rates if the Interstate Commerce Commission finds that the railroads need it in order to render the service essential to the progress and prosperity of the territory. Many, on the other hand, especially in smaller cities, have expressed opposition to any advance; and the most striking thing about the reasons given for their opposition has been their diverse, and even directly conflicting, character.

The railroads in presenting their case had to keep in mind both the rate-making principles laid down by the Transportation Act and those set forth in the Hoch-Smith resolution. The former plainly contemplate basing rates mainly on the cost of railroad service, including a fair return upon the value of railroad property, while the Hoch-Smith resolution plainly contemplates basing rates on "what the traffic will bear" having regard to the prices of commodities and the condition of the country's various industries, especially that of agriculture. It was necessary, therefore, for the railways, to show, first, that they needed an advance in rates to enable them to earn a fair return, and, secondly, that prices and conditions in the various industries, especially that of agriculture, warrant higher rates.

Some newspapers have criticized the testimony on the ground that it does not show that the roads need higher rates, and cite the comparative prosperity of a few roads and the fact that the western roads as a whole are doing better than they have within the last few years. That the western roads as a whole had in 1924 $86,000,000 less income available for dividends than in 1917, and $55,500,000 less than even in 1911 is, of course, ignored by papers that take this stand. Other papers tacitly concede that the net return of the railways is inadequate, but claim that it could and should be largely increased by economies in operation effected by various means and especially by consolidations. The Phœnix (Arizona) Republican, for example, has published a long editorial entitled "Railroad Waste" which ignores the enormous economies that have been effected within the last five years and quotes at length from an article published by J. S. Bache & Co., New York bankers, regarding railroad competition from which the editor of the Republican draws the conclusion that "as a direct result of the ruinous competition among railways the stockholders and owners of railways securities are being deprived of a return on their investments through the present policies of the directors, executives and managements of the railways". W. Y. Morgan, a Kansas newspaper man and former candidate for governor, alleges that "the railroads are still operating in many ways just as they were ten, twenty or thirty years ago when every other large business has been compelled to readjust itself to changed conditions," and charges them with opposing the policy of consolidations "because it would let out a lot of high salaried officials, do away with large expense accounts and they do not know who would be retained". The lack of intelligence shown in many of the discussions is illustrated by the following quotation from the Saginaw (Mich.) Press: "Locomotives and cars undoubtedly cost more than during pre-war days but not many have been purchased. Wages may be higher, but a $27.50 per week average for four millions of employees would seem to be bottom price".

Many papers, while tacitly conceding that the evidence proves the railways are not earning and cannot earn a "fair return" with present rates, criticize them for proposing advances on farm products on the ground that the farmers are making no more or less return than the railroads. They claim that in accordance with the Hoch-Smith resolution rates should be based on what the traffic will bear, and that those on farm products should not be advanced regardless of the financial needs of the railroads because farmers could not afford to pay higher rates. On the other hand, although the passage of the Hoch-Smith resolution made it necessary for the railroads to introduce testimony tending to show that the improvement in the condition of agriculture makes it possible for the farmers to pay higher rates, the railways are attacked by not a few newspapers because, as is claimed, by introducing this testimony they have advocated applying the principle of what the traffic will bear to farm products rates. The Omaha Bee in an editorial entitled "Off the Main Line Again" implies that the railroads should confine themselves to showing their operating costs and financial needs, and says: "The right of the railroads to more revenue cannot be settled by turning the farmer's pockets inside out to determine whether he has a few dollars left".

Nothing could be plainer than that if private ownership is to be maintained the railways must be allowed to earn large enough net returns to raise the capital required to enable them to furnish adequate transportation service. If the profits of the railways were unregulated, as those of the agricultural and most other industries are, they would themselves so adjust their rates as to earn adequate profits. They have to demand that regulation permit them to earn reasonable returns only because they are subject to a kind of regulation to which most other industries are not subject. Nevertheless, some papers continue to complain because the railways ask that regulation give them what other industries get without regulation and what it must give the railways if private ownership is to be maintained. The Center (Colo.) Post-Dispatch, after having asserted incorrectly that the Transportation Act "provides that the railways shall make at least a certain per cent of profit" adds: "This Transportation Act is satisfactory to certain big business interests, but should any other business appear before Congress and ask to have a minimum per cent set for what they should make these same gentlemen and the big business press of the country would denounce it as socialism and all who advocated it as bolshevists and enemies of the government". We assure the Post-Dispatch that if the agricultural or any other industry ever appears before Congress asking to be subjected to regulation similar to that applied to the railroads nobody in the railroad business will object. It is a notable fact, however, that while such statements are often made, no other industry ever does beseech Congress to regulate it as the railroads are regulated.

Here and there a voice is still raised for the destruction of private ownership. The Oklahoma City (Okla.) Leader says that the "plea for higher freight rates gives characteristic evidence of the psychology of the great private interests of America. To them the farmer, like the coal miner, is a cow to milk, a bit of fruit to pluck, whenever it begins to show signs of ripening. * * * As long as the railroads are in private hands just so long, apparently, will they demand in rates all the farmer can pay and more than he can afford. Public ownership of railroads is the only hope for a permanent decrease in rates. * * * The habit of loading all the losses of the railroads on the farmer is apparently so strong as to blind the railroads to any other solution. If they do not see any other way out before long, public ownership will force the issue". It is almost refreshing to find a newspaper or a public man consistent enough to both oppose advances in rates needed by the railroads and advocate government ownership, because there are so many of them who avow their opposition to government ownership and then advocate a policy of regulation which would break down private ownership and make government ownership inevitable.

There can be no question that there is less hostility and more intelligence in the editorial utterances of the western press regarding railway matters than there has been in many years. On the other hand, our survey of what is being said about the western rate case, which is but very inadequately summarized in the foregoing, only too plainly indicates that there is still in the west a great deal of the sentiment which inspired the Granger uprising in the 70's, which enabled Populism to win its widespread victories in the 90's, which backed the movement under President Roosevelt for the adoption of the drastic policy of federal regulation which prevailed before the war and ultimately caused government operation, and which rose against the Transportation Act in 1921 and 1922 and elected Magnus Johnson, Brookhart and other extreme radicals to Congress.

It is a remarkable fact that, although the west is more dependent for its development and prosperity on the railroads than any other section, there always has been, and still is, more anti-railroad sentiment in that section than in any other. There remains a vast amount of public relations work that the railroads must do in that section if there is ever to exist and be maintained in it a sentiment which will not be a serious menace to the credit of the railroads throughout the country and to private ownership. For it must not be overlooked that all the railways of the country are subject to the same policy of federal regulation, and that to whatever extent favorable or unfavorable sentiment in the west influences regulation it will so influence it as to affect and largely determine the future of the railroads in every part of the country.

A. S. M. E. and the Railroads

THE meeting of the American Society of Mechanical Engineers at Altoona, Pa., early this week was significant in more ways than one. In the first place, honorary membership—the highest gift within the province of this great national engineering society—was conferred upon General W. W. Atterbury, an outstanding representative of the mechanical engineering profession, practically simultaneously with his elevation to the presidency of the Pennsylvania Railroad, one of the most important executive positions in the railway world.

In the second place, the meeting at Altoona marked an important step in an enlarged program of service of the Society to the railroads. Up to about 15 years ago the Society gave comparatively little attention to railway mechanical engineering problems. The American Railway Master Mechanics' Association and the Master Car Builders' Association, together with the several other railway mechanical associations, were dealing specifically with railway mechanical problems. True, the mechanical experts associated with the railway supply companies received little recognition in these organizations, but this was partially offset by the fact that the railway clubs, in which both the railway and railway supply interests participated on an equal basis, were at that time devoting most of their programs to purely mechanical department topics. With the taking over and absorption of the Master Mechanics' and Master Car Builders' Associations by the American Railway Association, the railway supply

engineering experts lost most of what little standing they had had in the major railway mechanical associations. Then, too, there came about a gradual but steady broadening of the programs of most of the railway clubs, so that they now interest and attract representatives from all departments. As a result, fewer and fewer highly technical mechanical engineering subjects appear on their programs. Because of these changes, the mechanical engineering experts in the railway supply field, with their large opportunities for research, observation and study along specific lines—which the railway mechanical engineer with a wide variety of duties cannot find time to go into in the same thorough and painstaking way—have little opportunity to participate in the work or programs of the railway associations.

Most of these changes came about gradually, in fact, almost imperceptibly. Fortunately the A. S. M. E., with a growing consciousness of the possibilities of rendering a larger service to the mechanical engineering profession and the public which it serves, was experimenting and seeking for ways in which to enlarge and strengthen its influence. First, the Meetings and Program Committee, which at that time arranged for the annual and spring meeting programs, appointed certain sub-committees to see that the interests of some of the more important phases or applications of mechanical engineering were properly attended to; among these was a railroad committee.

Meanwhile local sections were being organized and extended to arrange for local programs and bring the Society, at least to a small degree, to the great number of members who could not regularly attend the national gatherings. Soon, also, came the realization that certain important phases of mechanical engineering, such as power, fuel, railroads, management, etc., needed something more than a sub-committee of the Meetings and Program Committee to further their interests. Professional divisions were started to co-operate with both the national organization and the local sections, in promoting an interest in and building programs for their particular fields of specialties. Needless to say, many obstacles—some of them almost insurmountable—had to be overcome. War and post-war conditions, and difficulties in trying to balance the budget, helped to complicate the situation. Naturally mistakes were made, but these only strengthened the determination of the leaders to achieve the goal—so to strengthen and extend the activities of the Society as to render a maximum service to the mechanical engineering profession and to the public welfare.

As a part of this program a Railroad Division has been developed which has given much attention to outlining and making effective a more connected and logical program. Here the mechanical engineering representatives of the railway supply companies, working shoulder to shoulder with the mechanical department representatives of the railways, have found an excellent opportunity to make a real contribution, both in helping to build strong programs for the various meetings, and in contributing valuable data in the interests of railway mechanical engineering progress. Up to a few years ago the A. S. M. E. included only a few railway men in its membership. This number, however, has been steadily growing and the Society programs have given a larger place to the discussion of railway or related topics.

The significance of the Altoona meeting is that up to this time the railroad programs have largely been confined to one or, at the most, two sessions at the national gatherings, carried on simultaneously with other professional division meetings, or some of the local sections have had railroad meetings. At Altoona, however, a two-day regional meeting was given over entirely to a railroad program; moreover, the meeting had more or less of the atmosphere of a national gathering not only because members were attracted from all sections of the country, but because the Council of the Society met at Altoona at the same time.

Few places could have been more appropriate for a gathering of this kind. Altoona, with its wonderful historical background from the viewpoint of railway mechanical development—with its graduates holding important places on the railways and in the industries throughout the country—with its great shops both for repair and new work, and its remarkable testing plant! Could any other place be more appropriate for holding a meeting of this kind, which promises to mark a most important milestone in the building up of a constructive and far-reaching railway program in one of our great national engineering societies? That there is a vital need for such a program was clearly expressed by General Atterbury, when he said: "However remarkable have been the strides of engineering progress in the past, the opportunities before us command all the experience, knowledge, breadth of vision and foresight that this body represents. Many problems of practical importance have already become the subject of research projects under the Society's auspices. Railroad transportation alone invites your best ingenuity. We have only scratched the surface of improvements, economies and efficiencies which almost every department of railroad transportation will require in the future."

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Catalogue of Pamphlets on Motor Truck and Motor Bus Transportation, 3d Edition. Pamphlets on co-ordination of motor vehicle and rail transportation, p. 3-4. 7 p. Pub. by Motor Truck Comm., National Automobile Chamber of Commerce, New York City. Apply.

Fall Calendar—Valuation Hearings, 1925. Schedule of hearings on various valuation cases. 22 p. Pub. by U. S. Interstate Commerce Commission, Washington, D. C. Apply.

Interstate Commerce Commission Reports, Volume 84—Valuation Reports, November 1923-January, 1925. Decisions on petition of National Conference on Valuation of Railroads, Inventories of Telegraph Property under Section 19A, and final valuations of 53 railroads. 873 p. Published by Government Printing Office, Washington, D. C. $2.25.

Tabulation of Statistics Pertaining to Signals, Automatic Train Control, and the Telegraph and Telephone for Transmission of Train Orders as Used by the Railroads of the United States, compiled by Bureau of Statistics, U. S. Interstate Commerce Commission. Statistics for Jan. 1, 1925, giving mileage equipped. 19 p. Published by Government Printing Office, Washington, D. C. 5 cents.

Transactions of the First World Power Conference. Reports on applications and development in power of all sorts, presented at Wembley Conference, England. Vol. III contains reports on internal combustion engines; Vol. IV reports on power applied to air, highway, railroad and water transport including 14 reports on economic aspects of electrification of steam railroads. 4 vols., 6,500 pages. Published by Van Nostrand, New York, and Percy Lund, Humphries Co., London, Eng. $70.00.

Transportation Survey, 1925, by McClellan & Junkers-

feld, Inc. Report to the Public Utilities Commission of Washington, D. C., on present transportation conditions. "Steam Railroads," p. 76-77; 149 (Excursions); 161. The traffic maps, parking maps, accidents maps, and other transport data may also be of interest. 2 vols. Issued by McClellan & Junkersfeld, Inc., Washington, D. C.

Periodical Articles

Twenty-five Years of the Motor Car, by H. W. Slauson. An historical sketch with survey of the motor vehicle industry at present, its extent and relation to other industries, and a forecast. American Review of Reviews, October, 1925, p. 397-403.

New Books

Railway Accounting Procedure, 1926 Edition. Edited by E. R. Woodson, 886 pages, 6 in. by 9 in. Bound in imitation leather, illustrated. Published by Railway Accounting Officers Association. Distributed by Simmons-Boardman Publishing Company, 30 Church street, New York. Price $3.00.

Railway Accounting Procedure is in reality the manual of the Railway Accounting Officers Association. It details the standard and recommended practices adopted by that association over a long period of busy years. The book is published annually, a new volume appearing each year following immediately after the annual meeting, and incorporating within its covers the new material accepted at the meeting. The association's busy committees have studied so many subjects and made so many new recommendations each year as to give the editor no small problem. He has solved it as the yearly editions have succeeded one another by increasing the size of the volume and by skilled conciseness that has served to keep the book from increasing beyond proper limits. This year his problem must have been particularly difficult, notably because of the great amount of work done by the Committee on Disbursement Accounts. That committee, after two or three years hard work on the subjects, brought to the 1925 meeting extended recommendations relative to fuel accounting and payroll accounting. With the former were included 34 new standard forms and these and the accompanying text required 44 pages of the proceedings. The report on payroll accounting included 51 standard forms, and 76 pages of the printed proceedings were required for its presentation. Furthermore, Mr. Woodson, besides incorporating in the new Procedure the gist of these recommendations as well as all the others adopted at the 1925 meeting, has also added a very valuable feature in the form of a 100-page bibliography showing all the articles and books published on railway accounting from 1836 to date. The result is shown by a brief group of statistics. Thus, in 1921 the book then known as the R.A.O.A Synopsis contained about 400 pages. Three years later the 1924 Procedure contained over 600. The new edition, however, contains no less than 886. It is well arranged typographically, well printed, in large readable type, beautifully bound and constitutes a work as handsome as it is useful, which is a good enough recommendation for any book.

Railway Accounting Procedure is an absolute necessity to any railway accounting man who has any respect for his profession and desires to progress in it. It has in its previous editions been found valuable to accountants engaged in other lines of industry and valuable also to railways workers in other departments who wish to learn more of accounting methods. The additions this year which expand the size of the 1926 Edition about one-half over its immediate predecessor will make the volume of even greater value than ever to the railway accounting man who, if nothing else, must keep up-to-date in his knowledge and methods of doing his work. At the same time—particularly because of the extensive bibliography and the new subject matter prepared by the committee on disbursement accounts—the book will prove of greater usefulness to those in other departments. The operating department will find much of value in the paragraphs dealing with such details as tracing waybills; the preparation of waybills; station freight accounting; preparation and handling of freight bills, etc. The mechanical department will be interested in the sections dealing with fuel accounting; improvements or additions to units of equipment; car repair bills and vouchers, etc. There is much of value to the stores department, there being sections dealing with accounting for material and supplies at storehouses; a plan for distributing material inventory differences, etc. Persons in all departments will be interested in the bibliography; in the details regarding payroll accounting; in the sections relating to the reporting of time returns and labor and material, etc. It is not the sort of book one recommends for light reading, but it is a book that will prove of greatest value when questions of accounting procedure arise that must be answered promptly and correctly.

There are, generally speaking, three phases of railway accounting and, therefore, three phases of the study of that subject. One phase seems to relate to the science of the accounts; the second to the detailed procedure whereby the figures are compiled, and the third to the study and analysis of the figures once they are compiled. The science of the accounts we find in the Interstate Commerce Commission accounting classifications and in the treatises telling us the purposes of these classifications. There is a single book available on the second phase; that book is Railway Accounting Procedure and there is no other. There is at the present time no up-to-date book on the third phase, although one—White's "Analysis of Railroad Operations"—will soon be off the press. The railway accounting profession suffers for lack of books. It is, however, fortunate as concerns the calibre of such books as it has—fortunate particularly because it has Railway Accounting Procedure.

Procedure has four principal sections: Freight Accounting, Passenger Accounting, Disbursement Accounting and Overcharge Claim Rules, and there are also sections on Statistics and Terminal Accounting. Each section is so arranged that there are shown separately the rules that are mandatory; the rules that are recommendatory; plans and methods, and the standard forms. Each section is indexed separately and in addition the use of the volume as a reference book is assisted by the many bold face side heads.

The bibliography is divided into several parts, the references in each being arranged chronologically. One part deals with the historical references to the science of railway accounting, and another gives references to the work of the accounting department. Still another is a subjects section. In the last one notes several pages devoted to articles on various phases of accounting or statistical analysis of mechanical department activity. A section of several pages dealing with maintenance accounting contains one solid page of references to the committee reports of the American Railway Engineering Association. There is a page of references to the stores department, etc. Of course, the significance of this is that it reminds us that railway accounting is by no means an accounting department matter alone. The accounts reflect the activity carried on in the transportation, maintenance, mechanical, stores or traffic department. Railway Accounting Procedure, therefore, while it is of leading interest to the accounting department, contains much of value to all departments.

Letters to the Editor

The "Southern Pacific Type"

SAN FRANCISCO.

TO THE EDITOR:

The *Railway Age* of August contained an editorial on "Naming the New Locomotive Types" and suggesting that the new 4-10-2 type should be called the "Sierra."

While this would otherwise be a satisfactory designation, the proper name for this type of locomotive is "Southern Pacific Type," as these locomotives were first designed and ordered for Southern Pacific Lines. The name "Southern Pacific Type" was agreed upon with the American Locomotive Company before the order was placed, and the fact that another system placed another and later order for a single locomotive—attaching the name of its road to the type—should not take the credit away from the Southern Pacific.

There is no real difference between this situation and the 2-10-2 type called the "Santa Fe Type" which was first used by the Santa Fe but is now ordered by a great many lines.

W. A. WORTHINGTON,
Vice-President, Southern Pacific.

More Criticism of Our Pension Systems

ST. LOUIS, MO.

TO THE EDITOR:

Mr. Clark is to be congratulated for the searchlight which he has turned on the pension systems now in effect on American railroads in his letter published in the *Railway Age* of September 26. He made clear a vital weakness when he called attention to the fact that no employee has a legal claim to a pension. Each case is acted on individually by the management, thus giving it a club over the heads of the older men to keep them in line.

There may in some cases be a certain advantage in having this club in the case of a strike, but a fact that the managements seem to lose sight of is that *the men spend far more time working than they do in striking.*

I have been railroading for over 25 years, have belonged to a union all that time and have never been called out on a strike yet. Obviously the care which has been taken to keep me from going out on a strike has been so much waste. Yet the unnecessary precautions which are taken do tend to make the men look upon the pensions somewhat in the same manner as President Robertson of the firemen's brotherhood—as a wedge between them and their organizations.

Railroad men are about the only large class of people who serve the public regularly who have not been demoralized by the tipping system. They do not stretch out their hands for charity. Yet it was not so long ago that a railroad in announcing the pensioning of several faithful employees gave out the news under some such heading as this: "Company Grants Gratuities to Aged Employees."

There are two ways of doing a kind deed. One is a self-effacing, modest method which does not injure the self-respect of the recipient. The other is the snobbish method of ostentatiously bestowing largess. Which method is the more likely to develop the kind of morale which the railroads need to succeed in their relations with the public, and which method have they so far used?

EMPLOYEE.

Form "19" Train Order Must Be Restricted

SAN FRANCISCO, Calif.

TO THE EDITOR:

I have read with interest the articles in the *Railway Age* of August 22, by Mr. Quirk and Mr. Smart. It seems to me that we are moving around in a circle—rehashing old arguments.

The Southern Pacific has been using the "19" form of train order for years, to do just what both of these gentlemen claim for it and have obtained excellent results. However, they seem to overlook the fact that what they call the "unrestricted use" is not unrestricted. They have admitted restrictions in their articles. The Southern Pacific placed the same restrictions on its use as they mention, and does not therefore claim that it is used "unrestricted."

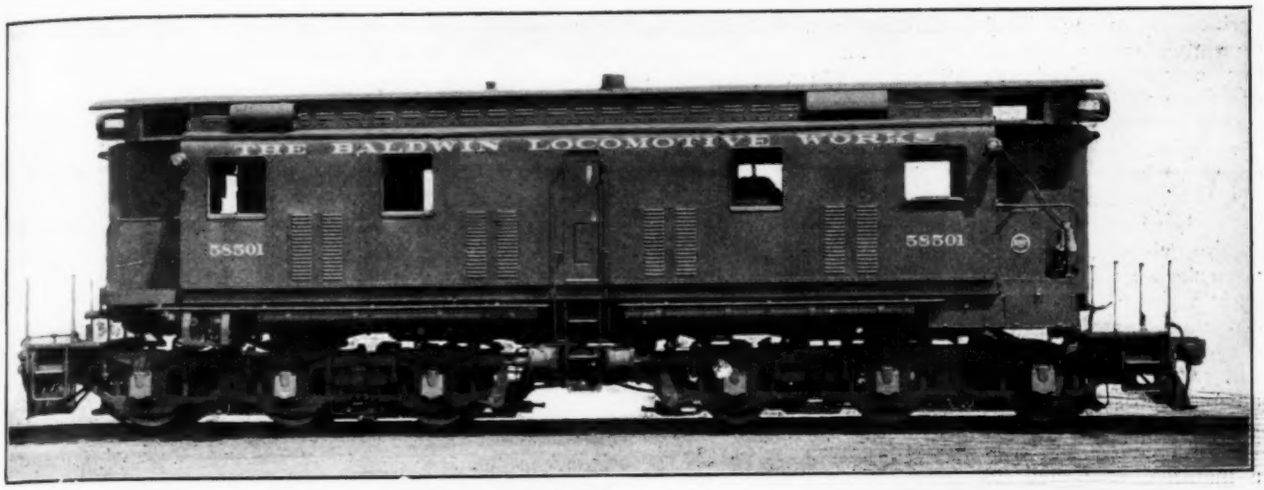
Mr. Quirk says "Train order signals and the rules governing have been perfected until there is no longer any doubt of delivery, except through failure of the 'human agency,' and on this the form of order has no influence." If two or more "19" restricting orders are held and the operator overlooks one under the "unrestricted" use, then the form has an influence. Had the two orders been issued on the "31" form or an approval of the clearance card by the dispatcher been required, the delivery, no doubt, would have been made, as the dispatcher is then given an opportunity to check the operator for an omission. If all orders issued were "helping orders" would these gentlemen suggest the clearance card approval of the dispatcher? I agree with Mr. Quirk that the conductor's signature to an order does not guarantee its fulfillment. The fulfillment of an order has nothing to do with the question at issue. It is clearly a case of delivery and non-delivery.

I remember a disastrous head-on collision caused by the *unrestricted* use of the "19" form. The operator held six "19" orders and delivered only five, with no clearance card approval. The dispatcher had no opportunity to call the operator's attention to the omitted order as he has when a clearance card restriction is placed on its use. The standard code does not require the dispatchers' approval for clearance cards as these writers seem to think necessary in their so-called "unrestricted" use of the form. Mr. Quirk goes so far as to quote the Sante Fe rule, placing a restriction on his "unrestricted" system.

The signing of a clearance card is not equivalent to the signing of a "31" order; therefore nothing is gained by this new departure. It does not cost any more to sign an order than to sign a clearance card. Signing a clearance card is merely a makeshift requirement.

If a dispatcher desired to reduce a time order to give a train the right over all trains, necessitating the conferring of rights beyond the point where the order is received, by what means may he know that the order is in the hands of the conductor and engineman of the restricted train? Why not stop talking about the "unrestricted" use of the "19" form and make rules that will eliminate the signing of any order, except where it is necessary? If it is the elimination of one of the two printed forms of train order that the gentlemen desire, that can be done without destroying the principle. Let's forget the number "19" and "31" and build on a principle.

WM. NICHOLS.



1,000-hp. *Diesel-Electric Locomotive Built by the Baldwin Locomotive Works*

Baldwin Builds Diesel-Electric Locomotive

Considered to be largest of its type—The engine develops 1,000 *horsepower—The rated maximum tractive force is* 52,200 *lb.*

A DIESEL-ELECTRIC locomotive has been built by the Baldwin Locomotive Works, Philadelphia, Pa., which has the largest horsepower capacity of any internal combustion locomotive yet built in this country and has been approached in horsepower capacity by only one such locomotive; namely, the Lomonosoff locomotive* built in Germany for the Russian government. The Lomonosoff locomotive is driven by a four-cycle engine which is reported to have developed 1,100 hp. on the test plant.

The rated maximum tractive force of the Baldwin locomotive is 52,200 lb., the oil engine having a rated capacity of 1,000 hp. The total weight of the locomotive is 275,000 lb., of which 180,000 lb. is carried on the driving wheels. The total length over the couplers is 52 ft. 1¾ in. The locomotive has a total wheel base of 38 ft. 4 in. and a rigid wheel base of 12 ft. 8 in. The electric transmission consists of four Westinghouse type 353-D-3, standard railroad type, self-ventilating 200-hp. motors which are geared to the driving axles through flexible gearing. Power is furnished to these motors by a Westinghouse self-ventilating, direct current generator and exciter directly connected to the engine.

Referring to the illustration showing the side view of the locomotive, it will be noted that the general appearance is similar in many respects to that of an electric locomotive. The cab is of all-steel construction and extends the entire length of the frame. The height from the rail to the top of the cab is 14 ft. 7 in. and the width overall is 10 ft. 5 in.

The power plant of the locomotive is carried on two six-wheel trucks, each made up of the usual locomotive type bar frames in the pedestals of which are mounted outside journal boxes of three pairs of wheels. The two motors in each truck are geared to the outside axles, the middle pair of wheels running idle. The power plant, consisting of the oil engine, the direct-connected generator and the auxiliaries, is carried on two longitudinal cast steel girders which are connected by cast steel cross-ties at each end. These cross-ties also contain the center pins which engage the center plates of the two motor trucks. The drawbar pull is transmitted from one truck to the other through a drawbar and radial buffer construction at the inner ends of the two trucks, of a type commonly used in electric locomotive design.

A feature in the design of this locomotive is the arrangement of the spring rigging which has been patented by the builder. Two springs are placed over each box, one on the inside and one on the outside of the frame, each resting directly on top of the journal box and connected with each other by short cross equalizers at each fixed attachment to the frames. These equalizers allow for any variation in the height or deflection of the two springs which act together. Placing the spring alongside of, instead of over the top of the frame as would be required by the usual arrangement of one spring for each journal box, permits the lowering of the center of gravity of the locomotive at least six inches and also permits a corresponding increase in the headroom in the cab.

The Diesel Engine

The oil engine, which is of the two-cycle solid injection type, was built entirely in the shops of the Baldwin Lcomotive Works according to an arrangement with the Knudsen Motor Corporation, New York. There are twelve cylinders arranged in two groups of three pairs each, the pistons in the two cylinders of each pair driving on separate parallel crank shafts. Each pair of cylinders, however, has a common combustion space,

*This locomotive was described in the *Railway Age* of January 31, 1925., page 321.

enclosed by a single head casting and supplied with fuel through a single injection nozzle. The six fuel pumps, one for each combustion chamber, are operated by a cam shaft. In the center of each of the two crank shafts, between the two groups of cylinders, is a large herring-bone gear, the gears from the two shafts meshing with a herring-bone pinion on the end of the generator shaft which steps up the crank shaft speed of 450 r.p.m. to 1,200 r.p.m. at the generator.

The cylinders, which have a diameter of 9¾ in. and a stroke of 13½ in., contain the ports usual in two-cycle internal combustion engines near the end of the stroke. The gears, which keep the two crank shafts in constant angular relationship, are so meshed that the pistons on one side of the engine are in slight angular advance in relation to those on the other side. Through the ports in these cylinders the exhaust takes place, to be followed by the admission of scavenging air from a manifold connected to the corresponding ports on the other side of the engine. The scavenging air thus enters through the ports in one cylinder and passes up through that cylinder, down through the other and out through the exhaust ports once in each revolution. On the return stroke the piston on the exhaust side of each pair of cylinders closes the exhaust ports slightly in advance of the closing of the air intake ports of the other cylinder so that scavenging air, which is delivered by a blower at about 2½ lb. pressure, builds up to this pressure in the cylinders before the intake port closes and compression begins. In this way a degree of super-charging is effected which materially increases the amount of power that may be developed in a given cylinder volume.

Another special feature of the engine lies in the port openings in the cylinder and piston walls which permit air taken from the scavenging blower and boosted a few ounces in pressure through a small gear-driven fan, to blow through the closed chamber in the top of the piston above the wrist pin and mingle with the scavenging air in the cylinders, the purpose being to cool the pistons.

The Westinghouse 750-kw., separately excited, direct current generator develops 750 volts at 1,200 r.p.m., and is direct connected to the step-up shaft of the oil engine, the increase in the speed of this shaft over that of the engine crank shafts permitting a material reduction in the generator weight.

The principal auxiliaries which form a part of the power plant are the scavenging blower, the water cooling system and the air compressors. The scavenging air is delivered by a centrifugal blower which is driven at 3,600 r.p.m. by a gear connection to an extension of the generator shaft. This blower has a capacity of 4,500 cu. ft. of air per minute at 2½ lb. pressure. The water cooling system, which was designed by the Modine Manufacturing Company, Racine, Wis., consists of two radiators, one built into each end of the locomotive cab, the water being circulated by a gear pump driven from the engine shaft. Air is circulated through each radiator by a fan, the fan at the front end of the locomotive being driven mechanically from the engine shaft, while that at the rear end opposite the generator is motor driven.

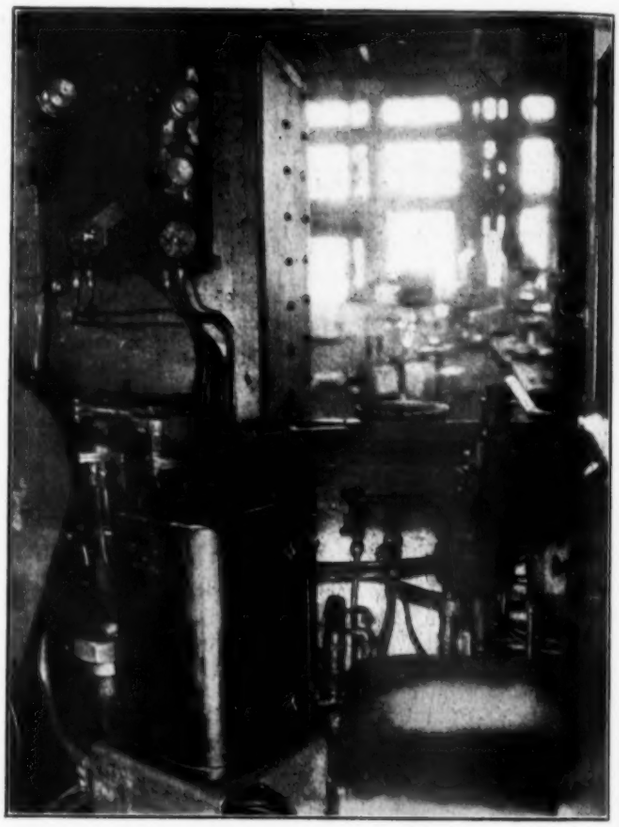
The locomotive is equipped with three Westinghouse motor-driven traction air compressors. One of these is suspended under the cab at each end of the locomotive, while the third is mounted in the cab over the generator. Connected by means of a clutch to an extension of the motor shaft of this compressor is a small four-cylinder gasoline engine which is used in starting the locomotive to build up a main reservoir pressure of about 120 lb. to supply air to turn over the Diesel engine the few revolutions required before combustion takes place in the cylinders. The gas engine is then declutched and stopped, the compressor continuing to operate as a motor-driven unit under the same automatic control as the other two units.

The starting system consists of six air distributing valves operated by the cam shaft, each admitting air to its pair of cylinders through a check valve in the cylinder head. A single throttle admits air to all the distributing valves when the motor is to be started.

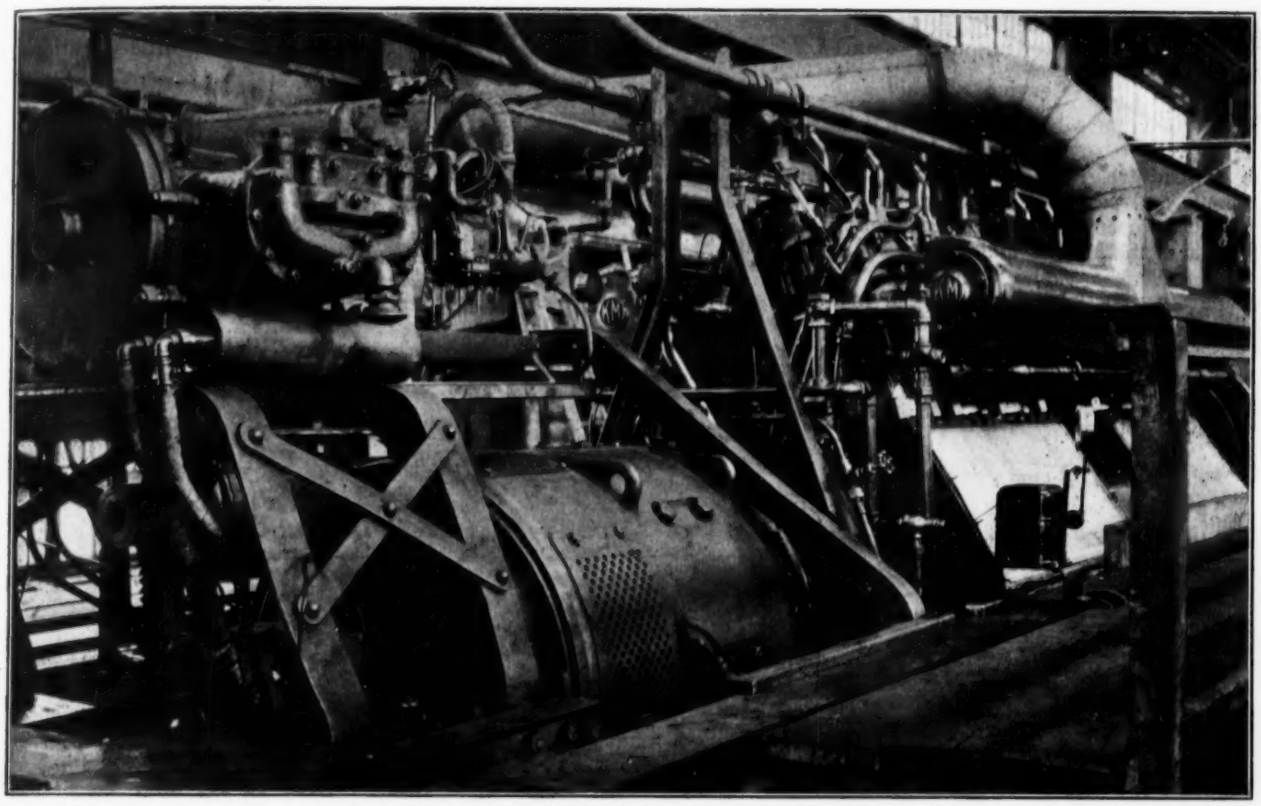
The lubrication of the engine is a combination of the force feed and splash systems, the oil circulating pump being driven mechanically from the engine shaft.

The Control Equipment

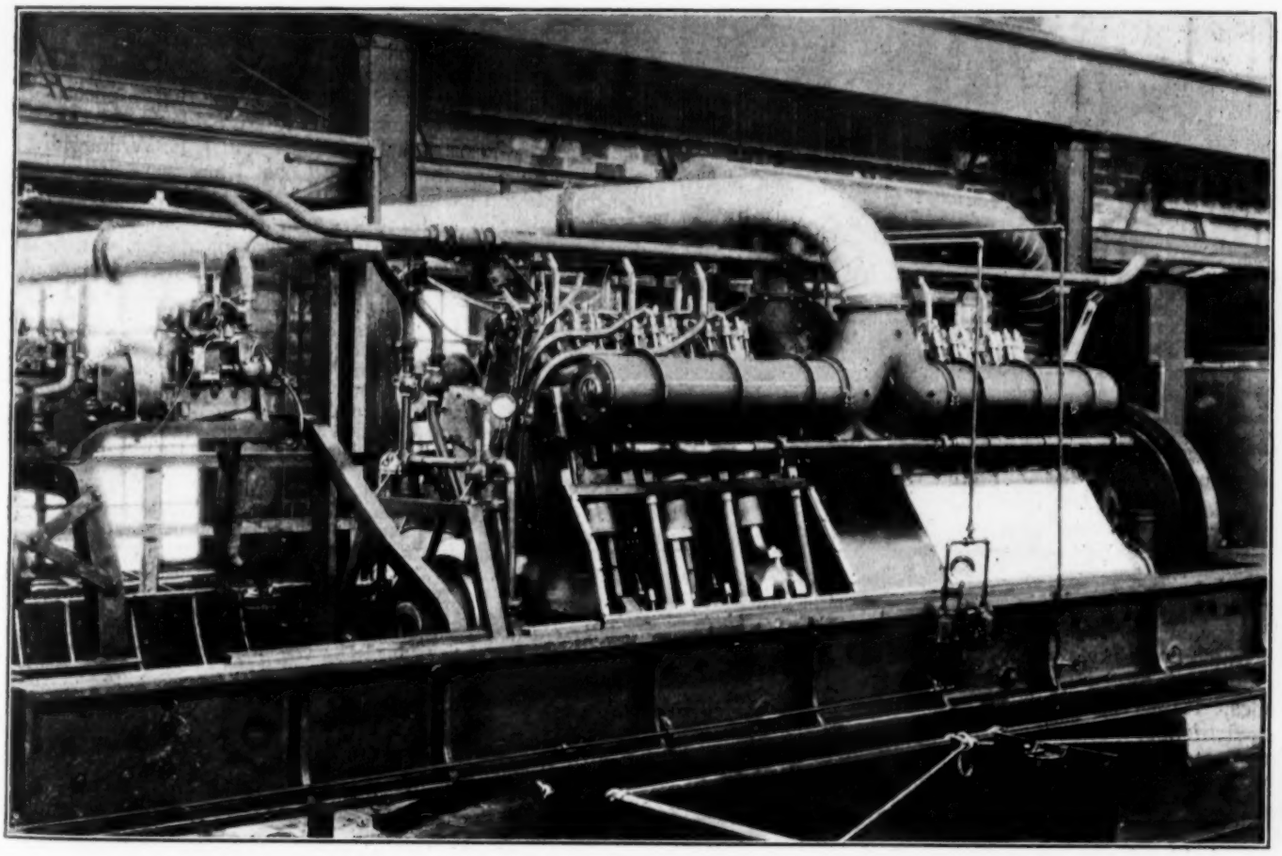
The control equipment, which is of the Westinghouse electro-pneumatic type, is arranged for double end operation of the locomotive. With the Diesel engine and generator running at a constant speed, the locomotive is accelerated from standstill by the manipulation of a master controller, shown in one of the illustrations, by which the voltage of the generator is increased in steps, through field control, as the speed of the locomotive increases. With full generator voltage for a given generator speed developed in this way, further acceleration is effected by increasing the Diesel engine speed and, hence, the generator power output. The oil engine throttle is controlled by the manipulation of a valve handle on the master controller, which permits the increase or decrease of oil pressure in a cylinder, the piston of which, in moving outward, compresses the governor springs. The throttle thus controls the speed at which the governor operates to reduce the stroke of the oil injection pump pistons. The unusual feature of this throttle control from the operator's standpoint, lies in the fact that it is manipulated to admit or release oil, supplied at constant pressure, to or from the control cylinder, only long enough to produce the desired



Interior View of the Cab Showing One of the Control Stations



View of the Generator End of the Power Plant



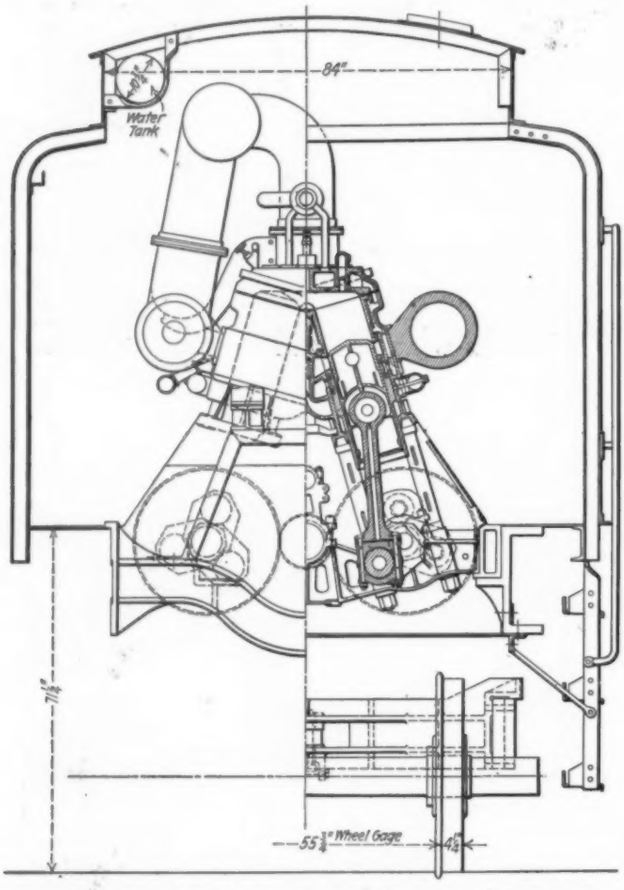
View of the Engine Mounted on the Cast Steel Girders, Showing the Scavenging Air Blower at the Right

engine speed, and is then brought to lap position until another change of power output is required.

Service Trials

The locomotive, which was built in June, 1925, has for some time been in service on the Reading, part of the time in road freight service, between Reading, Pa., and Tamaqua, and part of the time in yard service. In both services the locomotive has given a good account of itself from a mechanical and power standpoint, the high tractive force characteristic of a constant power output machine adapting it particularly well to heavy switching service.

While no attempt has yet been made to test the locomotive accurately in actual service, the following operating results have been obtained. The locomotive has



Cross Section Through the Locomotive, Showing a Section Through One of the Oil-Engine Cylinders—The Scavenging Air Manifold Is Shown at the Left and a Section Through the Exhaust Manifold Is Shown at the Right

handled 1,000-ton trains from Reading to Tamaqua, a distance of approximately 40 miles, about three-quarters of which is upgrade at the rate of about .7 per cent with an average of 3.3 gal. of fuel oil per 1,000 gross ton-miles. It has moved these trains over the grade at a speed of approximately 16 miles an hour. On the runs in the reverse direction, with 2,000-ton trains, the fuel consumption averaged one gallon per 1,000 gross ton-miles.

The block tests of the engine indicate a fuel consumption of .40 gal. per horsepower hour at full load, increasing to .45 gal. per horsepower hour at half load. The engine has developed a maximum crank shaft speed of 480 r.p.m. It operates smoothly with very little vibration.

PRINCIPAL DIMENSIONS AND PROPORTIONS OF THE BALDWIN DIESEL-ELECTRIC LOCOMOTIVE

Builder	Baldwin Locomotive Works
Type	Diesel-electric
Weights on drivers	180,000 lb.
Total weight	275,000 lb.
Wheel bases:	
Truck	12 ft. 8 in.
Total locomotive	30 ft. 4 in.
Diesel engine:	
Type	Knudsen, 12 cyl., 2 cycle
Rated capacity	1,000 hp.
Cylinders, diameter and stroke	9¾ in. by 13½ in.
Generator:	
Type	Westinghouse, 750 kw. d.c.
Voltage	750
Motors:	
Number	4
Type	Westinghouse, Type 353-D-3, 200 hp.
Capacity of fuel tanks	750 gal.
Length over couplers	52 ft. 1¾ in.
Diameter of wheels	40 in.
Size of journals	7½ in. by 14 in.

Hearing on Proposed New Seaboard Lines in Florida

WASHINGTON, D. C.

HEARING on the application of the Seaboard-All Florida and other subsidiaries of the Seaboard Air Line for certificates authorizing the construction of 195 miles of new line in Florida, including lines from West Palm Beach to Miami and Florida City on the east coast and to Fort Myers, Punta Rassa and points in southern Florida on the west coast, was begun before Examiner Davis of the Interstate Commerce Commission on October 6. S. Davies Warfield, president of the Seaboard, C. R. Capps, vice-president in charge of traffic, and M. H. Cahill, vice-president in charge of operation, were the principal witnesses on behalf of the applicant and a large number of representatives of Florida communities that are anxious to have the lines built were also present to testify in support of the application. There was no opposition, but H. N. Rodenbaugh, vice-president of the Florida East Coast, and J. E. Willoughby, chief engineer of the Atlantic Coast Line, were called by the commission as witnesses to describe their construction activities in the section proposed to be occupied by the Seaboard lines. In his opening statement Mr. Warfield outlined the policy of the Seaboard and the financial methods adopted in part as follows:

The application before the Interstate Commerce Commission, upon which this hearing is held, contemplates extensions and additions to the Seaboard Air Line Railway to carry out the policy determined upon and announced to this commission and before Examiner Davis at the hearing held in Jacksonville, Fla., May 2-3, 1924, on the application for authority to construct the cross-Florida extension of the Seaboard system. I long ago realized the possibilities of the vast territory traversed by the Seaboard which had not yet recovered from the effects of the Civil War and determined to direct my efforts to the development of the southern country through the development of the Seaboard Air Line into a Southeastern self-sustained transportation system. It has been my personal belief that in such an undertaking it could be shown that the results to be obtained from the free exercise of incentive and initiative and the application of plain business foresight and methods, unhampered other than by an intelligent government regulation, might be advantageously contrasted with the fast spreading belief that the consolidation of great aggregations of railroad mileage was essential to secure adequate service at reasonable rates and economical operation. I believed that under the policy adopted a so-called "weak" railroad, as the Seaboard was then characterized, would be converted into a strong one and into a transportation system to be regarded as of the country and territory it served—to be sustained by the patronage of those itself sought to sustain.

This railroad, as the commission is aware, was returned from federal control with its equipment in deplorable condition, maintenance neglected and without means to finance its requirements.

About that time its major security, the 6 per cent first and consolidated bonds, were selling around 38; these bonds that were free, together with all the tangible treasury assets of the company, were hypothecated with the government as security for the loans made by the Interstate Commerce Commission at a time when this railroad was expected to go under. The prompt and intelligent action of the Interstate Commerce Commission assisted in protecting the territory served by this railroad and the railroad itself.

Shortly after this the so-called tentative plan of country-wide railroad consolidations was announced by the commission, only tentative, but the plan suggested turning both the Florida East Coast Railroad and the Richmond, Fredericksburg & Potomac Railroad, the latter then and now owned by six railroad interests, of which the Seaboard Air Line is one, over to the Atlantic Coast Line, the Seaboard's most active competitor. Any such proposal, which would cut the Seaboard off at its head and its feet, was to my mind suicidal from every standpoint, and it was essential to demonstrate the fact that the territory served by this railroad was capable of intensive development and deserved better treatment than to be turned over to one railroad system and left without competitive service necessary to fully develop its resources in working out its destiny.

The Seaboard had several lateral non-paying lines running partly across the state of Florida, which had been extended from time to time to meet pressing local traffic conditions. It was apparent to those who had followed the gradual development of the South, an empire in itself, largely devastated by the war, with soil and climatic conditions unsurpassed, that it would respond to a development not to be equalled by any other section of the country.

The opportunities afforded by the state of Florida stood out in bold relief; with thirty-five million acres, twenty-two million of which were capable of productive development, only some two million acres developed, its extensive coastal area, productivity of its soils for both citrus fruits and vegetables, with climatic conditions unsurpassed, it did not require stretch of the imagination to recognize the opportunities for development and constructive work which that state held out.

But apart from this, it was apparent that should a governmental policy be accepted which would bottle up this railroad and the territory contiguous to it, the Seaboard Air Line would suffer severely, as would the people of the entire South.

It was at this juncture that I presented to the directors of the railroad plans for organizing the Seaboard into a system to occupy territory then undeveloped in various sections of the South and particularly on both coasts of the peninsula of Florida. This state was forging ahead at a pace when it would shortly reach the point far beyond the capacity of then existing railroad mileage and facilities to take care of its business.

There were two problems then confronting the Seaboard Air Line: one—to define a policy which would put the road in position to demonstrate its urgent necessity in developing the millions of acres of unoccupied lands of the South, which properly brought before the world and given proper transportation facilities would support its own independent system of railroad, without being tied to or have tied to it any other railroad system whether weak or strong; two—to place this railroad in position to enable it to take care of the public demands upon it and regain its credit, then nearly destroyed, so that it could finance the requirements of its territory.

In line with the policy adopted, the construction of 204 miles from Coleman, Fla., a point on the main line, to West Palm Beach, was determined, after serious consideration, to be essential to the development of the state of Florida in connecting the two coasts with a cross-state short line piercing the wonderful ridge section of central Florida—the lake country—and which would also give quick through line transportation to the East and to western points. Statements that were made to this commission upon the announcement of this program of construction that this line was not justified can now only be characterized as ridiculous as the tremendous volume of business offered and transacted over this extension will testify and which will be shown at this hearing.

But there was a question equally as important; how could this extension or, in fact, the current money expenditures of this railroad be financed, the financial structure of the railroad having broken down under the weight of federal control. The comprehensive plans for a railroad system to be built up under successive steps was evolved and the very necessities for construction essential to its success were used to present a financial plan which I believed should bring a successful outcome.

After months of negotiation with six banking houses, I was informed that it could not be carried out; the reason given was the low price at which the 6 per cent first and consolidated bonds were then selling, 60-65, and the two issues of the capital stock 10-11 and 5-6. It was evident that something more than a security of this railroad was essential to finance so extensive a piece of construction as the initial undertaking so soon after federal control with the securities of the Seaboard selling where they were. I therefore negotiated the purchase of one hundred and sixty thousand acres of land, lying contiguous to the proposed line, to be used in the sale of bonds as additional inducement to secure the money to build this extension.

The Florida, Western & Northern Railroad was organized in 1924 and $7,000,000 of 7 per cent bonds were financed. As much as I disliked to see a 7 per cent bond used, it had to be done, and this in itself did not carry the sale, the prospective profit from the land then turned over to the Land Company of Florida, represented by its common capital stock which was used to help sell these securities.

The demonstration that has been made to this commission and to the public as to the necessity of the cross-Florida line has been accepted everywhere as evidence of the desirability and necessity of continuing the policy the Seaboard had adopted in establishing its lines as a Southeastern transportation system and to look upon further extensions in Florida and elsewhere as *system* requirements, not to be considered in their relation to any particular section alone. A policy of watchful waiting until the pressure of traffic overcomes facilities is wasteful in the extreme as now demonstrated particularly in Florida; the Seaboard is endeavoring to prepare both physically and financially to meet the public demands upon it, in anticipating and in advance of development and not wait until overtaken by it.

The pressure on this railroad to extend to Miami and to Florida City on the East coast and to and down the West coast, has been made known to this commission.

It became apparent, however, that it would be necessary and more expedient to form a railroad company which would cover nearly all the Florida extensions and additions manifestly advisable to be made, having in mind at the same time that this railroad should not permanently continue to finance through constituent companies, the Seaboard guaranteeing the securities of each such company. It was necessary that the first and consolidated mortgage on the Seaboard system, an open mortgage with the right to issue up to $300,000,000 bonds of different maturities and interest-bearing rates, must ultimately be relied on as the means of financing the Seaboard system's requirements referred to. Large expenditures had been made and would still further be made to put the main line of the system in condition to take care of the business already resultant from the policy of extension that had been adopted.

Therefore, with the ultimate result in mind of placing these first and consolidated 6 per cent bonds of the railroad in position so that they could be used not only in financing the present normal requirements of the system but also to be later used to finance the payment of $16,453,000 of government loans made during and immediately after federal control, and after having satisfied the bankers that no more land warrants would or could be used in the sale of future issues of Seaboard securities, the Seaboard-All Florida Railway was organized to carry out not alone the purposes of extension in the unification of the system but to take up by call the outstanding bonds of the Florida, Western & Northern Railroad and rid the property of bonds bearing a rate of 7 per cent in order that the Seaboard system could be brought to a bond interest rate not greater than 6 per cent.

Provision had been made to increase the carrying capacity of the system by, among other additions, closing the 22-mile gap between Inverness and Brooksville, Florida, thus giving a second Seaboard line out of Tampa and St. Petersburg, Florida; by installing automatic signals on 253 miles of the railroad between Richmond, Virginia, and Hamlet, North Carolina; by installing 15-25 interlocking plants; some double tracking on the Jacksonville-Tampa line; relaying of approximately 200 miles of track with 100-pound rail; the heavy charges in the installation and lengthening of a great many passing tracks; by extensive transfer and yard facilities at Baldwin and Wildwood, Florida, points of interchange with the main and cross-state lines; the purchase of 50 locomotives and other equipment, etc.

In financing the Seaboard-All Florida Railway the bankers desired to use 6½ per cent bonds, but after continued negotiation the interest rate was lowered to 6 per cent. This enabled me to immediately sell $10,000,000 of 6 per cent first and consolidated bonds at 92¼, which were quoted on the market twelve months previous at about 80 and now selling in the neighborhood of 94½ to 95, the highest point reached since the war.

No better evidence of the soundness of this method of financing in its successive steps could be given than the fact that within two months after the sale, on July 31, 1925, of the $25,000,000 Seaboard-All Florida Railway bonds, guaranteed by the Seaboard Air Line Railway, the $10,000,000 of the first and consolidated 6 per cent bonds of the Seaboard Air Line Railway Company were sold on September 15 at 92¼, as stated, substantially the same price that bonds under this mortgage had been originally sold ten years ago, before the war, the present sale being the first since the war, and notwithstanding the fact that there were $27,767,500 of these bonds outstanding, selling on the market at

between 94 and 95, the highest price since the war, to which I have referred, the bonds purchased by the bankers were sold to the public at 94¾. The preferred stock is now selling at 46-47 and the common at 45-46.

The Seaboard has thus been brought in an incredibly short time from a so-called "weak" carrier to a strong one; this is evidenced by the fact that within about a year from the financing and construction of the cross-Florida railroad, $35,000,000 of bonds have been sold at prices highly satisfactory, culminating in the sale of these first and consolidated 6's to enable this railroad to continue to take care of its system expenditures, bringing the railroad back to and far beyond its pre-war financial status.

It is proper I should here state that while there were large opportunities and inducements made to me individually to participate in the purchase of Florida lands and receive the benefit of the great increment in the value thereof, I do not own, nor have I owned real estate in Florida, believing it to be my duty to act in these matters for the Seaboard Air Line Railway alone and without reference to any emoluments which might accrue through personal investment in Florida lands.

Witnesses from Miami and other communities on the Florida East Coast described in glowing terms the rapid development of Florida but said that the development was being retarded and endangered by the congestion on the Florida East Coast and the embargoes which had delayed the delivery of building materials and other commodities. Mr. Rodenbaugh told of the work being done by his road in double-tracking its line as far as Miami and predicted that conditions would be greatly improved in 60 days. Mr. Willoughby described the progress in the building of the Fort Myers Southern. In reply to questions by counsel for the Seaboard intended to show that both these lines had made slow progress in attempting to keep up with the development both witnesses retorted with statements comparing the quality of their construction with that of the Seaboard's new lines. Mr. Capps' testimony outlined various features of the permanent development of the state in contrast with the activities in the direction of land speculation, and said that the Seaboard had carried more passengers into Florida in August this year than it had in January.

Senator Underwood Criticizes Lack of Southern I.C.C. Members

THAT the Interstate Commerce Commission, principally because not one of its members is from the southern part of the country, is inadequate to solve the problem of railway consolidation was the view expressed by Oscar Underwood, United States Senator from Alabama, in an address before the State Bank Division of the American Bankers Association, meeting at Atlantic City on October 1.

"In my judgment," Senator Underwood said, "the greatest boon that could come to the capital invested in our railroad systems would be to work out a settlement, satisfactory to and approved by the public, that would take the entire transportation question out of politics and establish rates that would be so reasonably permanent that the business of the country could depend on them for its future development. This can only be done finally and satisfactorily under a plan that has the confidence and approval of the public. Therefore it is of the utmost importance that the jury to try the case should be representative of all of the conflicting interests of America.

"Unfortunately, this is not true, either from the standpoint of the producer and the shipper or from the territorial location from which the committee comes. I have no criticism to make against the character, attainments or honesty of purpose of the members of the commission, but I do know that all men's environment to a greater or less extent affects their judgment, and that the part of the body politic which is actually represented on the governing body is far more likely to attain a decision that is favorable to its local viewpoint than the mass unrepresented and on the outside.

"Since the organization of the Interstate Commerce Commission in 1887, when it had but five members—and now it has more than double that number—the South and the West, viewed either from the standpoint of their territory, their population or their production, have been deprived of equal and just representation on the commission. As the matter stands today, if you were to draw a straight line across the United States from the city of Baltimore in the East to the city of San Francisco in the West you would find that every member of the present commission was a resident of the territory north of that line at the time of his appointment.

"We are facing the solution of one of the most momentous questions that have confronted the business life of our people, and yet the court that shortly will try and decide the case has not among its members a single representative from a territory that comprises nearly one-half of the entire area of the United States, extending from the Pacific to the Atlantic Ocean."

"Why this is so I need not say, nor is it likely that good can be accomplished by holding a post-mortem on the errors of the past, but I do say that if we wish a complete and satisfactory settlement of the problem of railroad consolidation and a permanent basis established that will take the railroads out of politics, serve the producers of the country and become a final determination of the matter, fair and just representation must be given by the commission to that territory that stands unrepresented today, before the last decree is rendered, proclaiming the permanent lines of railroad consolidation."

The passage in 1920 of the Esch-Cummins act, providing for certain railroad consolidation with the approval of the Interstate Commerce Commission and consent of the railroads was, Senator Underwood said, the first step toward a solution of the railroad problem inasmuch as the main purposes of these consolidations was to establish a more satisfactory rule for rate-making.

"The new plan, if carried out," he continued, "undoubtedly will eliminate financial weakness and, it is hoped, will improve structural instability and, if effectively adjusted, stabilize earning power so that a basis for rate-making can be adopted that will be fair to the shipper and adequate to the carrier.

"It may be truly said that if no more is accomplished by the act of 1920 than the stabilization of railroad securities, the accomplishment of small economies and slight, though general, reduction of railroad rates, but little has been achieved for the producing and consuming public.

"A most vital equation in the future development of business and the continued prosperity of the producing masses of our people is cheap and adequate transportation facilities. We cannot accomplish this by the confiscation of private property through the establishment of rates by law that do not produce an adequate return, but we can benefit by our experience in the past and develop our transportation lines along natural and economical routes where the freight will move along the lines of least resistance."

ONE HUNDRED SCHOLARSHIPS in economics in American colleges and universities, each worth $5,000, are to be provided for by a fund, subscriptions to which were begun at the annual convention of the American Bankers' Association at Atlantic City, N. J., last week. Prominent bankers say that the association expects to secure pledges of $1,000,000, or enough for 200 scholarships.

Railroads Injured by Subsidized Competition

President Sargent of the Chicago & North Western shows effects of transportation by motor vehicle and Panama Canal—Return of 5¾ per cent too low

F. W. SARGENT, president of the Chicago & North Western, delivered an address regarding the railroad situation in the middle west before the Chicago Association of Commerce, on Wednesday, September 30. He called attention to the fact that there are in the western district 133,000 miles of railroad operated by 50 systems and that not one of these has made 5¾ per cent either on its value or property investment account in any year since the war. The condition mentioned, he contended, is not due to inefficiency in management as is shown by all of the tests commonly accepted for testing efficiency of railroad operation. He gave statistics showing that the efficiency of operation has increased, but that wages and other kinds of operating expenses as well as investment and fixed charges have increased out of proportion to advances in rates. He called attention to the fact that as a result of reductions in rates made since January 1, 1922, the average freight rate in the United States is now only 15 per cent higher than prior to 1920, and in the western district is only slightly over 9 per cent higher than prior to 1920. Another important factor is the increase in taxes. For the North Western in 1913 they were $3,000,000, while in 1924 they amounted to almost $9,350,000 and will, it is estimated, in 1925, be $10,000,000.

Mr. Sargent discussed other causes for the situation of the western roads, in part, as follows:

"Another factor which has had its influence upon the earnings of the carriers of the western district is the increase of motor vehicles coupled with the refusal of state authorities to permit railroad companies to discontinue unprofitable branch line passenger train service.

Effect of Motor Competition

"The motor vehicle has materially reduced the revenues of the carriers from short haul business. This may be illustrated by the following facts: In 1923 the Chicago & North Western carried over 8½ million less intrastate passengers than in 1916, a decrease in round numbers of 50 per cent. To meet this situation, strenuous efforts have been made to reduce passenger train mileage in those cases where the gross passenger revenue has not been sufficient to meet the out-of-pocket cost. Notwithstanding the strenuous efforts made along this line, we have only been permitted to reduce our passenger train miles by approximately 7 per cent.

"Some may contend that more frequent service would help meet this situation. This, however, has been tried in an intensive way. There are places where railroads have put on very frequent service, maintained high rates of speed, in an effort to compete with the motor bus, but without increasing passenger travel or decreasing the patronage to the buses. The bus travels from house to house and from hotel to hotel. It affords a form of competition on short haul business that probably cannot be successfully met by vehicles which must follow the rails.

"It might be contended that the railroads should go into the motor bus business, and in such contention there is much merit, especially in those districts where the population is sufficiently dense to justify two parallel and competing forms of transportation. But in branch line territory where there isn't sufficient travel to sustain both forms of transportation one or the other must give way.

"Before the public determines which should surrender, it should take into consideration the factor of regular and permanent service in all seasons of the year, and should also place both forms of transportation upon an equality with respect to operation and maintenance of their properties, including the expense involved in methods of taxation.

"I am not presenting an argument against the use of the motor bus or the motor truck. I am only stating that all forms of transportation should be placed upon an equality with reference to the burdens imposed upon them by governmental authority, and that we should stop taxing the railroads to support competing forms of transportation, including the motor buses, motor trucks, and water transportation.

Panama Canal and Middle West

"This leads to the discussion of another cause of the condition, as before described, of the railroads in the western district. I refer especially to the Panama Canal.

"In my opinion, the people of the Middle West are unfairly discriminated against by the Panama Canal. The people of the Middle West are paying taxes indirectly to and they are securing no direct benefit from, the Panama Canal. On the other hand, they are being asked at the present time to submit to an increase in freight rates on their own products, and one of the reasons this increase is necessary in this middle western territory is the Panama Canal. Freight rates have a direct and immediate relation to traffic density. When surplus over-land freight that might be used to fill empty equipment in westbound movement finds its way through the Panama Canal by virtue of a subsidy, the reason is at once apparent, and it does not require a microscope or a scientist or a rate expert to detect the effect on the transcontinental carriers serving this great Mississippi valley. True the report of the governor of the Panama Canal shows a profit on the books as kept, but there is, in fact, up to date no profit from the tolls of the canal, and the canal is operating every year at a large deficit, and the taxpayers of this country are paying almost as much per ton per mile to put freight through the canal as they are paying in rates per ton-mile to their railroads.

"The book cost of road and equipment, including material and supplies, of the Chicago & North Western as of December 31, 1924, was $506,639,605. The cost of the Panama Canal to the American government up to June 30, 1921, was $443,000,000. It will therefore be seen that the property investment account of the railway is about 14 per cent greater than that of the canal. The authority for the cost of the canal may be found in the report of the Joint Commission of Agricultural Inquiry, Volume 3,

Transportation, Page 393. The same report assumes that a charge of four per cent upon the investment would be reasonable.

"The governor of the Panama Canal in his report gives the following: 'The fiscal year of 1924 has been by far the most prosperous in the history in the Panama Canal. The total transit revenues were $24,681,954, with the net canal transit expense of $8,373,905, leaving net revenue of $16,307,948.'

"If the canal paid taxes back to the people on the same basis that the railroads do, it would pay two per cent upon $443,000,000, or a total of $8,860,000. Four per cent upon the capital invested would be twice this amount or $17,720,000, so that taking the items of taxes and interest into consideration if paid by the government on the same basis as the railroad, the net revenue of $16,307,948, would be changed to a deficit of $10,272,000.

"The canal will never justify itself to this middle section of our country until out of tolls from transportation it pays back into the treasury of the United States not only its operating expenses but an amount equal to the taxes which the people would receive if it were privately owned and operated, plus at least four per cent upon so much of the value of the canal as may be properly assigned to the commercial transportation business. There can be no doubt that a great injustice is being perpetrated upon the trans-continental railroads traversing this Mississippi region between the Alleghanies and the Rockies. This injustice arises from water competition, which is subsidized and wholly unregulated. Different rates may be made on different dates, with no knowledge on the part of the railroads as to the kind or class of competition they must meet to secure the tonnage to which they are rightfully entitled. Tolls are so low through the canal that they do not afford a return upon the investment which the government has made and neither do they take into consideration the tax burden which the canal ought to pay back to the government so long as it is used as a means for competing with the railroads which are compelled to pay taxes, not only to the Federal but to their respective state and local governments.

"The railroads are restricted by law in their efforts to meet this water competition. They are restricted from making rates that would enable them to fill up some of their empty equipment moving westward unless they make similar reduced rates to intermediate points. It must be apparent to the layman that to make similar reduced rates to intermediate points would bankrupt the railroads in a short time, because the railroads cannot compete with water transportation in all inland points, especially when that water transportation receives a direct subsidy, as I have pointed out. They can compete with water transportation to terminal points where empty equipment is moving in any event for return loads, if permitted to fill this empty equipment with freight at low rates to meet canal competition. The amount received from this additional freight would inure to the benefit of all the shippers as it would be directly reflected in the earnings of the trans-continental carriers.

"The country as a whole in the end will not prosper by this discrimination against the Middle West. There may be a temporary advantage. In the end, however, any such sectional preferential treatment will not succeed. The Middle West right now is entitled to have tolls through the Panama Canal placed on such a basis as to make the canal self-supporting not only as to operating costs but with reference to a fair return on capital investment plus an allowance for taxes equal to the average taxes on equal capital invested by the railroads.

"The people of the Middle West are also entitled to have boat lines operating through the canal subject to the jurisdiction of the Interstate Commerce Commission, just as the railroads are, and required to file and publish tariffs, so that the trans-continental railroads may know what all rates, including tramp steamer rates, are through the canal. At the present time boat lines know the rates of the railroads and can underbid them at will. The railroads have no way of knowing what any fixed form of competitive water rates are or will be.

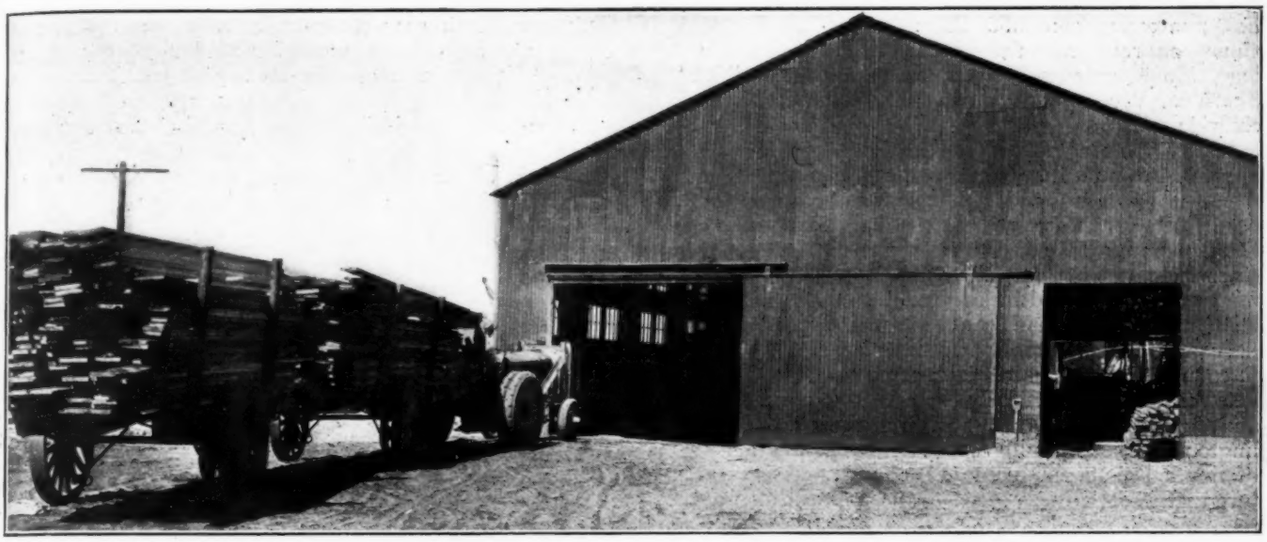
"It is also apparent to my mind that the rate of return which the Interstate Commerce Commission has prescribed for the railroads; to-wit, 5¾ per cent is wholly inadequate. In considering the railroad problem we should keep in mind that in purchasing capital railroads are in competition with other forms of industry, and there is no other industry where the hazard is on a like basis with that of transportation, which upon the whole and in the aggregate is satisfied with a return of 5¾ per cent.

"I have made a careful study of what I believe to be the requirements of the railroads in the western district for new capital, and I arrive at the conclusion that they should have somewhere around 500 million dollars per annum for some years to come if they are to go forward with additions and betterments, improvements and expansions necessary to the proper development of the western territory.

"While the public has not lost faith in railway bonds it has lost faith in railway stocks, and at the present time there are very few railroads able to finance their capital requirements except through the sale of securities in the form of bonds or equipment trust certificates. If our people of the Middle West would fight with and not against their railroads for the development of this territory the results would be beneficial not only to agriculture but to all commerce and industry."

International

The President en Route to Omaha to Address the American Legion



Approaching the New Saw Mill with a Load of Lumber

Burlington Opens Saw Mill to Meet Purchasing Problem

New undertaking by stores department cuts tie costs, stimulates traffic and creates good will

THE Chicago, Burlington & Quincy has opened a saw mill on its property which is more than a saw mill. On the one hand it is a facility with which the company associates a large saving per year in the cost of cross ties, together with more certain deliveries of this material, although cross ties do not come near the place.

Photo by U. S. Forest Service

A Typical Logging Camp in the Black Hills

It is also credited with substantial savings in other lumber costs. In addition, the stimulation of a widespread feeling of public good will toward the railroad, and stabilization of, if not impetus to, traffic production in a low revenue producing territory, are also associated with the operation of this facility. These, with the further fact that the mill is an enterprise of a railway stores department, gives the facility and the activities connected with it a distinctive place among recent developments in acquiring and handling material and supplies.

The mill itself is a relatively inexpensive and inconspicuous structure situated in a lumber yard on the company's property at Havelock, Neb., which is the main shop point for the western lines. It consists essentially of an unlined, hip-roof, corrugated-iron-covered, steel shed, 40 ft. wide and 80 ft. long, in which are installed three machines, a cut-off saw, a rip saw and a four-sided surfacer and planer equipped for dressing and matching. When fully equipped the entire investment in the plant will not exceed $20,000. By utilizing the waste material from tie producing operations in the Black Hills of South Dakota, however, which is its function, this mill occupies a key position in an important purchasing problem.

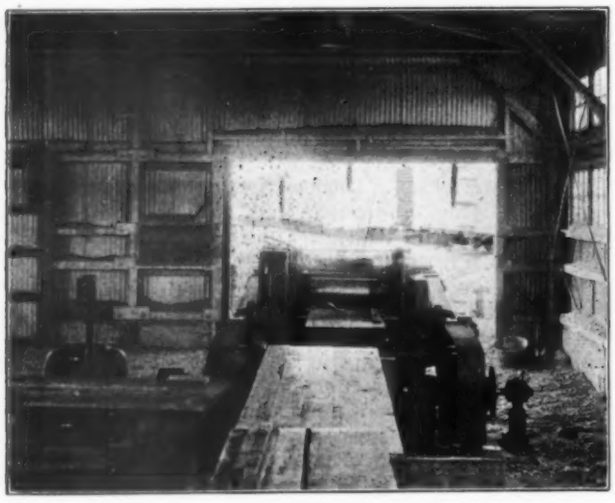
This problem was one of escaping the necessity of securing its ties from distant markets. The Burlington requires about 2,500,000 ties per year. However, its more than 9,000 miles of line do not tap large tie producing areas and there are no large areas of standing timber on the railroad except in the Black Hills and the Big Horn mountains, which have not been available for any extensive operations, for reasons that will be explained later. In consequence, it has been the practice of the company to purchase almost all of its ties from remote markets. Of the total quantity required, about 2,000,000 ties were oak, which have been secured from the south through the St. Louis, Kansas City and Memphis, Tenn., gateways. Since about 1910 these ties have all been secured well in advance for seasoning and have been stored in the company's treating plant at Galveston, Ill., where they are treated by the Card process. The remaining

ties, numbering about 500,000 per year, are fir, secured almost entirely from the Pacific coast through the Billings, Mont., gateway, from whence they are shipped to Sheridan, Wyo., for seasoning and treatment with zinc chloride.

With the storage yards and treating facilities at Galesburg, Ill., for the lines east, and at Sheridan, Wyo., for the lines west, reasonably satisfactory arrangements had been made for the seasoning, care and distribution of the ties that were obtained. But relief was desired from a purchasing standpoint, particularly with reference to ties for the lines west with their source of supply from 1,000 to 1,300 miles away. This condition was emphasized during the war when the scarcity of ties placed the Burlington, in common with other roads situated far from home markets, at a disadvantage in securing acceptable material and dependable deliveries at favorable prices. The Burlington had been getting some ties from the Black Hills of South Dakota for many years and it was at this juncture that attention was given to the problem of increasing the output from this source.

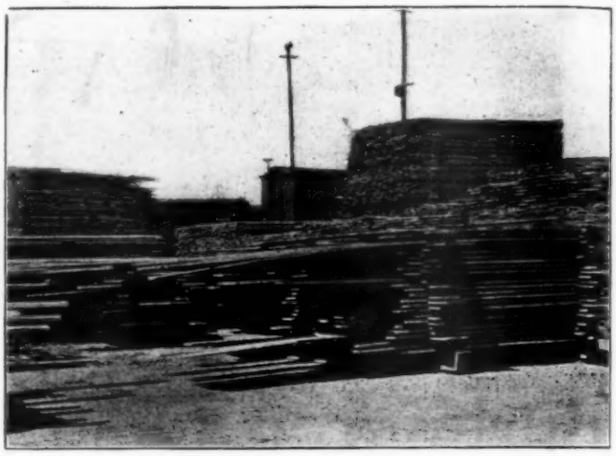
It was commonly known that the Black Hills contained large quantities of timber from which ties could be made. The site of two national forests, it is not only a relatively large area but is well wooded with western yellow or mountain pine, a wood which, while inferior to the Oregon fir of the Pacific coast for structural purposes, is acceptable for roadway and a variety of other requirements, price and other considerations proving favorable. There are approximately 1,200,000 acres of land bearing this timber in the Black Hills, according to government surveys, some private but mostly government owned.

As far as the government was concerned there was nothing to prevent the cutting of this timber. Instead it has been the effort of the government for many years to promote its utilization, consistent only with a high stand-



A Close View of the Surface from Which the Lumber is Chuted Into the Cars

ard of conservation. In the pursuance of this objective the Forestry Service has organized the entire region with a view to a sustained yield of timber for commercial purposes. The result is a so-called Silvi-Culture (tree development) program which is one of the most flourishing on the continent. Briefly, it provides for rotation of lumbering operations and reforestation of cut-over areas. The entire region is carefully surveyed with reference to the quantity and distribution of the timber and divided into circles, the size and location of which are dependent upon the topography of the country and the source of supplies. Each year the merchantable trees in selected circles are individually marked and sold to the highest bidders for cutting, according to a plan which places the intervals of cutting on any one given area from 30 to 35 years apart and divides the total quantity of trees in any given area into four periods, thus allowing for full growth in all cases before cutting and for a permanently sustained yield. On this basis it is estimated that the



The Lumber Is so Piled That the Overhang Represents Defective Ends Which Must Be Cut Off When Milling to Get Clear Stock

Black Hills region provides a potential supply of approximately 40,000,000 ft. of lumber per year from trees of 10 in. and larger, divided equally between the Harney and Black Hills forests. The statement is made that the quality of the timber to be cut in subsequent years will exceed that available for cutting now. The utilization of this timber, according to the plan, is to provide both a perpetual income for the settlers and for the government as well.

If the policy and activities of the government through the Forestry Service had been adequate to the needs of the region, the Black Hills would probably have become a favored source of supply for the ties required by the Burlington at an earlier period than it did, for the entire region is tributary to the railroad, the branch line from Edgemont, S. D., to the mines in that region, cutting it squarely in the middle. There were several factors at work, however, which were unfavorable to the extensive development of this region as a lumber producer. In the first place, with poor roads, little snow and few streams the labor costs for lumber operations are high. Again, the conservation policy also has the tendency to increase costs by spreading operations over larger areas than would be possible with unrestricted timbering; and it is also required that all brush left on the ground after the logs are stripped shall be neatly piled and burned at the expense of the contractors. Furthermore, owing to the inferior quality of the lumber for structural purposes, as compared with lumber produced on the coast, the potential market is restricted. But most important was the fact that when cutting ties from the logs, considerable by-product lumber was produced, owing to the small size of the trees, for which the operator paid the government but for which, in the absence of a market, he could get no reimbursement except by charging the waste against the cost of the ties. The result was that except for one or two enterprises, the Black Hills was inactive from a lumbering standpoint, notwithstanding the arrangement of the government under which all timber land is free

from taxation and whereby 25 per cent of all revenue received from the sale of timber is returned to the counties for their improvement and upkeep.

In looking to the development of this region as a tie producer it was apparent that if there was some way by which tie producers could dispose of the waste without loss, the effect would be wholesome. The logical solu-

Photo by U. S. Forest Service

The Black Hills Are Well Wooded with Timber Suitable for Ties

tion of the problem was for the Burlington itself to become the market for this material. This would remove the chief hindrance to economical tie production. Again, the production of ties could be made a preferred occupation as against other lumbering operations by confining the purchase of this waste material to such material as was produced from tie operations. After all doubts regarding the ability to use this waste material were removed, there remained but one difficulty to obstruct the adoption of such a course of action—that of having this material converted in acceptable form for railway use. Previously it had been the practice of the operators to leave much of the waste from tie operations in the form of slabs or other shapes which were only fit for firewood, while in only a few cases were operators organized and equipped to deliver surfaced material. Instead, with the small facilities of the mills, roughly improved for dismantling and for shifting to new areas, it was hardly practicable to expect more than rough lumber from them, much less to secure uniformity in the sizes produced by the different operators. It was this situation that induced the Burlington to build a saw mill of its own as the final and controlling step in the action taken to convert the Black Hills into a tie producing area.

The results of this action have demonstrated the wisdom of the undertaking. Where the Burlington was getting only 50,000 to 75,000 ties annually from this section previously, it is now getting about 700,000 ties per year, or about 200,000 more than were previously obtained from the Pacific coast. These ties are purchased according to A. R. A. specifications at the point of loading and are shipped to Sheridan, Wyo., for treatment and use on the lines west. The saving to the company from their purchase reaches many thousands of dollars annually. In addition to the ties, the company acquires about 250,000 grain doors and 150,000 coal doors per year, which are purchased in the built-up form, complete for service, on the basis of a specified number of doors per unit quantity of ties. Finally, grade lumber has been purchased at prices which, from the performance of the mill thus far, will enable the facility to return the investment in time from the saving in this phase of the work alone. The actual quantity of this lumber which was accumulated coincident with the purchase of the 700,000 ties mentioned was about 1,200,000 ft.

The effect within the Black Hills of the Burlington's action is also striking. With a million or more dollars paid to tie producers in the Black Hills per year under conditions where full payment is made by the railroads within 10 days after the acceptance of material and where the inspection reports are accepted by the local banks as cash, the region has felt a stimulus to activity which has not been experienced since the days of the gold excitement in that region. On the one hand, the settlers have been given a market for practically the only commodity which a large portion of the area can produce. Again, the government also derives an increased income from the swelling sales of the timber stands which also reflects to the advantage of the settlers through the increase in the allotment to the counties from these sales. Thus in the Custer circle where the Forestry Service collected $90,000 last year from the sale of timber, about $25,000 represented the share of the local government.

A Partial View of the Lumber as It Was Accumulated and Stored at Havelock, Neb., Pending the Construction of the Mill. Note the Mill in the Background

Finally, the Burlington, too, has profited from its course of action in other ways than from the saving afforded in the cost of ties and in the assurance of more certain deliveries. While no particular thought was given to the subject at the outset, conspicuously cordial relations exist between the railroad and the towns in this region while the increased lumbering activity shows a tendency to influence the revenue traffic of the region in such a way as at least to offset losses from diminishing mine operations, if not to increase the total volume.

Traffic statistics are being watched with interest for their disclosures of what the final result will be. In this connection it is also to be observed that with the Black Hills tonnage consisting principally of inbound shipments, the ties are being shipped out of the region at little additional expense over what it has required to handle the empty cars. These developments, naturally, have served to enhance the attractiveness of the undertaking.

The new saw mill and the other operations in connection with the undertaking are under the stores department, co-ordinating with its operation of the two treating plants as well as all lumber inspection and the custody of all lumber and ties until application. In the conduct of the new work the company employs four inspectors in the Black Hills and a foreman and three men at Havelock under the jurisdiction of the division storekeeper for handling the lumber and operating the mill at that point.

In disposing of the by-products from tie production, the operators are encouraged to convert this lumber into one-and-two-inch rough stock, the one-inch stock ranging in width from 6 in. to 12 in. and the two-inch from 4 in. to 12 in. Some of this lumber is manufactured into grain and coal doors, which are built on the ground by the operators according to Burlington specifications. The remaining lumber is purchased according to Burlington grading rules after inspection at the point of shipment, and is shipped direct to Havelock for seasoning and milling.

Although about 500 miles from the Black Hills, Havelock was selected as the site for this mill for various reasons. Among other reasons it is the central material yard for the lines west. Again, the maintenance of shops at that point affords electrical power for operating the mill and steam for heating it. This location also affords a favorable labor market and desired conditions for supervision.

Upon arrival at Havelock the rough lumber, often coming mixed in the cars and never being uniform in length, is sorted in piles so that all the material in any pile can be cut into the same size stock. Since great variation exists in the length of the material it is the practice when piling to have all the variation on one side of the pile, thus affording the means of maintaining such aisleways through the lumber stock as are desired both for stock taking and for loading out purposes. This lumber is then ready for milling, which is done only on order, thus avoiding the accumulation of surpluses as well as facilitating accounting. Any lumber undergoing milling is transported to the mill by a Fordson tractor and three-wheeled lumber buggies. The arrangement of machinery is such that the lumber can pass in a direct line over the crosscut saw, the rip saw and the surfacer into a car. The passage of the finished material along a trough to the car under the force of the surfacer without other power is a distinctive feature of the new mill.

Looking Toward the Discharging End of the Mill Before the Installation of the Concrete Floor and Blower Plans

While of inexpensive construction, this mill is built with a view to lessen fire hazard by the use of a steel construction, has large sliding doors at each end and a roof supported entirely on trusses to facilitate operations within the area. The machines were purchased new for the purpose and are electric-driven, with a separate motor for each machine. They are designed to produce finished lumber, fully surfaced and matched, at the rate of 150 lin. ft. per min., allowing a production of the plant of from 16,000 to 18,000 sq. ft. a day, completely finished and loaded for shipment. When the plant is completed by adding a concrete floor and installing a blower system for disposing of all sawdust, it will constitute an example of efficient practice in milling.

Photo Courtesy Modern Transport (London)

London Bridge Terminus, Southern Railway (England)

Mechanical Engineers Honor Atterbury

Regional meeting at Altoona, Pa., also considers transportation problems, both economic and technical

AN UNUSUAL event took place in Altoona on Monday, Tuesday and Wednesday of this week in the form of a regional meeting of the American Society of Mechanical Engineers, the entire program of which related to transportation, and particularly to the railroads.

The feature of the opening session on Monday evening was the conferment of honorary membership upon General William Wallace Atterbury, the newly elected president of the Pennsylvania Railroad System. Exceptionally well attended technical sessions were held on Tuesday and Wednesday mornings, the afternoons of these days being utilized for an inspection of the Altoona Works, the locomotive test plant and other facilities. The Pennsylvania Railroad and the Central Pennsylvania Section of the A. S. M. E. acted as hosts. A large front of engineering students from Pennsylvania State College were in attendance.

The meeting on Monday evening was preceded by a musical program by the Altoona Works' Choir. Elisha Lee, vice-president in charge of operation of the Pennsylvania, cordially welcomed the guests to Altoona.

General Atterbury's War Service

In presenting General Atterbury to the President of the Society, Charles Day of Day & Zimmermann, Inc., Philadelphia, outlined the reasons for conferring honorary membership upon the General. Mr. Day had been a representative of the Shipping Board on the War Council during the World War. It had been his duty to study transportation for the Shipping Board and how it could best be co-ordinated with the A. E. F. Transportation Corps. He is therefore exceptionally well qualified to speak with authority on General Atterbury's service in the World War. Mr. Day said in part:

"Noteworthy as had been Mr. Atterbury's contributions in the field of steam railroad engineering and operation, we must nevertheless follow his career in France before we can appraise to the full his great capacity and ability and the larger service he was privileged to render his country. Consequently. I will attempt, in the few moments remaining at my disposal, to carry you back to those months of unprecedented trial and strain, recalling to your memory particularly the transportation *task which had its beginning when our ships dropped anchor in the French ports and continued until their burdens, whether men or munitions, were delivered to the American fighting fronts.*

"The Ocean Transport Service was created to unload and 'turn around' the ships. The Transportation Corps was charged with the operation, maintenance and construction of all railroads turned over to the American forces by the French, and the supervision of all movements of American troops and supplies over French lines.

"As our regular army had not had experience in railroad operations, it required but a few months to emphasize the absolute necessity of calling upon men who had made such problems their life work.

General Atterbury Takes Charge

"When General Atterbury took hold of the Transportation Corps he realized at once that it would be impossible to foresee with certainty the scope and volume of the work involved or the best manner of handling it, for he was confronted with an overseas military program in comparison with which all previous expeditions dwindled into insignificance.

"The first and paramount cause for constant readjustments of plans and procedures was the rapidity with which America's participation increased. New construction became of paramount importance, much of which was taken over by the Army Engineer Corps. All other great departments embracing the service of the rear were being enlarged and modified in their scope and relationship to each other. There were also the problems growing out of the inter-relationship and division of responsibility between army and civilian personnel. Finally there was the necessity of working in the most intimate relations with the French authorities. Consequently, from the moment General Atterbury accepted his commission until the Armistice was signed, he was constantly concerned with questions of organization presenting a complexity and subtlety, coupled with a measure of importance, which can be understood and appreciated only by those who were themselves intimately identified with them.

"Among the most important changes affecting his work was the co-ordination brought about between the Transportation Corps and Ocean Transport Service through placing them both under the control of the Director General of Transportation. Within six months after General Atterbury's arrival in France these two departments embraced, under his supervision, over 1,600 officers and 60,000 men.

"The briefest reference to the work itself should start at the ports, which presented a stupendous task of expanding French facilities and providing entirely new works. To equip the ports of Brest, St. Nazaire, Bordeaux and Marseilles—to mention only the principal ones—for the cargo movement in prospect, was a vast undertaking necessitating the use of endless shiploads of materials and machinery from the United States, embracing docks, handling equipment of every description, shops and terminal facilities. Visualize, too, the reconstruction of hundreds of miles of main line railroad, planned and the construction supervised by the Director General's organization; the provision of much new equipment, including over 1500 American locomotives and 20,000 freight cars; the planning and designing of the necessary shops and the co-ordination of the entire work with the great army storage ideas, munition dumps, military encampments, aviation fields, hospital centers, etc. And finally, when you have grasped all this, let me remind you we are considering only the preparatory service that General Atterbury had to dispose of, before the job of troop and cargo movement could go forward on a large scale.

A Rapidly Changing Scene

"I have referred already to the rapidity with which the picture changed. In October, 1917, we had only 100,000 men in France and the enemy submarines were sinking a million tons of shipping every 30 days; consequently a troop movement at the rate of 75,000 to 100,000 men per month was an expectation of but a small and tremendously optimistic minority and then only as a possibility many months hence. Nevertheless, such miracles, seemingly, were wrought at home and on the seas that during the early fall of 1918 when the great German offensive was under way, General Atterbury was called upon to handle troops at the rate of 300,000 per month, and to include in his operations new American battle fronts never contemplated in the original plan. I will leave to your imagination the obligation that this great troop movement imposed for the continuous forwarding of increasing supplies of food, munitions, clothing and equipment. Just prior to the Armistice almost 1,000,000 tons of supplies were being handled per month and arrangements were being rushed for three times this amount, or 100,000 tons per day. A stupendous task under the best con-

ditions, but the job had to be done under the pressure of war and furthermore in large part through existing French railroad organizations.

"Harassing and at times almost unsolvable difficulties were of daily occurrence, a condition inevitable in such a stupendous organization created almost over-night from army and civilian personnel. But, throughout his services for the army General Atterbury steered his course with an eye only to the single problem of winning the war. His own fortunes suffered violent changes. He was not saved from the experiences of other civilian officers in this respect, but he hung on to the job and fought it through in spite of every kind of difficulty and opposition.

"After the resumption on an unprecedented scale of military operations early in 1918, it was a constant race between three agencies; those who were moving troops and supplies to our American ports of embarkation, the Shipping Board which supplied vessels for the trans-Atlantic haul, and those great departments in France which, under General Atterbury's leadership, unloaded the ships and forwarded the men and cargoes. Responsibility for delay was placed at different times on each of these departments, and finally the controversy between 'ships' and 'port facilities' became so acute that Mr. Hurley's and General Atterbury's departments became veritable storm centers. I mention these details that you may better understand the circumstances under which the work was prosecuted. So vital were the issues, that our Commander-in-Chief, notwithstanding the gravity of the situation at the front, made a searching personal inquiry, visiting every major port, investigating favorable and unfavorable report, only to serve an ultimatum that: 'General Atterbury's splendid engineering and administration achievements deserved nothing short of the fullest support that he could accord, and that henceforth he would look to him and him alone in connection with the ports and the rail transport.'

"If General Atterbury had not been gifted with rare ability and capacity and if his experience in the fields of engineering, construction and operation had been less inclusive, and finally if he had not been a life-long student of human relations, he could never have filled a post of such immense importance with such outstanding success throughout our participation in the war.

"He returned home early in 1919, decorated by his own country, by Great Britain, France, Belgium and Serbia. He resumed his work for the Pennsylvania Railroad, tackling with courage new and difficult problems growing out of the war—a period of unprecedented confusion, misunderstanding and difficulty following the return of the railroads to their owners."

The Presentation

Dr. William F. Durand, president of the American Society of Mechanical Engineers, and a member of President Coolidge's Committee investigating the air craft situation, in a few well chosen words presented General Atterbury with a certificate of honorary membership—the highest honor which the Society can confer.

In responding General Atterbury said in part:

"Societies, like individuals, gain in experience with the years. It must be a source of real gratification to the members of this Society to realize that their collective experiences have accomplished outstanding results in the field of practical benefit to human welfare. The record of such achievement is long and noteworthy. It can perhaps best be summarized by saying that in letter and spirit this Society has lived up to that broad definition of engineering which is the organizing and directing of men, forces and materials for the benefit of mankind.

"The sessions upon which you have begun are to be devoted particularly to transportation. This is a field in which mechanical engineering has been particularly responsible for a great deal of the remarkable development that has occurred in railroading in the four and one-half decades of the Society's existence. It is enlightening even to those who have witnessed this development to realize that the science of transportation has undergone such rapid expansion and improvement in that comparatively short period. One of the anomalies of the day is that notwithstanding the perfection of modern transportation as compared with even a generation ago it is generally accepted as commonplace and regarded almost with indifference. Yet that fact alone is a tribute to the achievement which it signifies.

"Just as engineering science and skill in their practical application have wrought revolutionary changes in human society in general, so mechanical engineering in its own sphere has contributed much to the development of a system of railroad transportation in this country that is unrivaled the world over. In safety, in comfort, in convenience, in speed, in capacity and in actual service the science of railroad transportation has accompanied in its advance the progress that has been made in engineering knowledge, methods and procedure. It is not too much for us to say that this Society may properly measure its own achievements in terms of such outstanding accomplishments as I have indicated.

"The fact that this Society has existed for 45 years, advancing with constantly broadening purposes and ideals, with a membership of 18,000 in the United States and Canada, with 1,500 members in active committee service and with 13 professional divisions organized to cultivate the entire field of mechanical engineering—all this indicates its tremendous power and ability to serve the needs to which its members are devoted.

"However remarkable have been the strides of engineering progress in the past, the opportunities before us command all the experience, knowledge, breadth of vision and foresight that this body represents. Many problems of practical importance have already become the subject of research projects under the Society's auspices.

Railroad transportation alone invites your best ingenuity. We have only scratched the surface of improvements, economies and efficiencies which almost every department of railroad transportation will require in the future.

"Fortunately, such tasks as these entrusted to the members of the American Society of Mechanical Engineers will command the attention of men of very high professional and intellectual attainments, and the results that we may expect cannot but be commensurate with what they and their associates in this Society have already accomplished."

Addresses

At the technical sessions the following addresses were delivered:

American Transportation, by Samuel Rea, retired president, Pennsylvania Railroad; The Transportation Industry and the Engineer, by S. P. Bush, president, Buckeye Steel Castings Company; The Growth of a Great Transportation System, by A. J. County, vice-president, Pennsylvania Railroad, and The Railway as an Economic Force, by Robert S. Binkerd, vice-chairman of the committee on public relations of the Eastern railroads. Technical papers were presented by Lawford H. Fry, metallurgical engineer, Standard Steel Works Company, on The Locomotive Testing Plant and Its Influence on Steam Locomotive Design, and by Dr. M. E. McDonnell, chief chemist, Pennsylvania Railroad, on Rustproofing Materials. Abstracts of several of the addresses follow and abstracts of the technical papers will appear in a later issue.

American Transportation

By Samuel Rea
Retired President, Pennsylvania Railroad

While railroads had their start in England, they have had by far their greatest and most important development here in the United States. Indeed, the story of American railroads has been written large and boldly upon practically every page of our country's history; while as factors in the economic life and advancement of the people, and in our national progress, the importance of the part which they have played has not even been approached by the railroads of any other nation.

The total railway plant of the world embraces at the present time something over 600,000 miles of line. Of these, some 260,000 miles, or not far from 40 per cent, are within the boundaries of the Continental United States. As we have only five to six per cent of the world's land area and population, it is therefore evident that we have some six or eight times as much railroad plant per capita, here in America, as the world's average.

Our use of railroad facilities per capita is on even a larger

comparative scale. The average American citizen, for example, utilizes from four to five thousand ton-miles of railroad service per year. Compared with this, the average citizen of Great Britain uses 300 ton-miles or less; of France, perhaps 400 ton-miles; while the pre-war German consumed some 600 ton-miles of rail service annually. This means that the per capita use of railroad service in America, measured in ton-miles of freight service, is from seven to fifteen times as great as in the most highly developed countries of Europe, and if we took the world average, including the less developed countries, the comparison would naturally be still more striking.

The difference, of course, is explainable largely by the relatively great distances in this country between the sources of raw material, the centers of production and the centers of consumption, coupled with our highly developed system of specialized mass industry. It measures the extremely high degree of our dependence upon railroad transportation, not only for the state of national progress which we have already reached, but for its day-to-day maintenance and for the continuance of our progress in the future.

The Financial Structure of American Railroads

The railroads of the United States as they stand today represent on their books an investment in physical property—that is road and equipment—of some twenty-two billions of dollars. The progress of physical valuation by the Interstate Commerce Commission, thus far, gives every warrant for expectation that these book figures of original cost will be much more than sustained. It is very questionable whether these great properties could be produced anew today, under existing conditions, for double the sums at which they are carried upon the balance sheets of their respective corporations. The capitalization of our railroads, an entirely distinct thing from cost or physical valuation, is much less than the investment figures. The total amount of railroad stocks and bonds at present outstanding in the hands of the public is only some seventeen billions of dollars. The difference between that sum and the figure of twenty-two billion dollars for investment in physical property invites attention to the vast degree of undercapitalization, the very reverse of "water," which is characteristic of the financial structure of American railroads as a whole. This difference will be increased rather than diminished when the Federal valuation work is completed.

It is safe and conservative to say that there is no other great form of industry or enterprise in the world which has been built upon a sounder financial basis, or which possesses greater fundamental strength and integrity in financial structure, than characterize our railroads. Should the solvency of these vast properties as a whole ever be threatened, the cause will not lie in any flaws or weaknesses inherent in themselves, but rather in elements beyond the control of their managements, such, for example, as a long continued abuse of the governmental power to regulate rates, and encroachments on the duties and responsibilities of directors. Such a disaster, however, I hasten to say, has in my opinion no longer the slightest likelihood of occurring. I am glad to voice my belief that we are past the principal crisis with respect to the difficulties and errors of governmental regulation and are definitely on the way to a condition in which constructive and helpful policies will distinctly dominate the regulative field.

The Trend of Regulation Encouraging

A steady improvement in the spirit and purpose of regulation has been quite evident in recent years, and more particularly since the termination of the temporary war-time control of the railroads. It can reflect but one thing; that is, the more friendly attitude of public opinion arising through the widespread better understanding of railroad problems, and of the vitally essential character of railroad service, which has come about so largely in the last decade. The public has been thoroughly aroused to the dangers of harsh and repressive regulation of the railroads, and has manifested unmistakable impatience and resentment at any tendency toward continued abuse and injury of these great public servants, for the purpose of furthering political ends or personal ambitions.

Regulation Still Far from Perfect

But, gratifying as is the change we are witnessing, it will never do to forget that railroad regulation is still far from perfect, and that we have a long way to go before it can be regarded as upon a truly sound basis. We cannot shut our eyes, for instance, to the fact that the provisions of the Transportation Act of five years ago, requiring the establishment of rates which will yield a fair and reasonable return upon the value of the railroads as a whole, have never yet been fully carried out. Not even the inadequate return of 5¾ per cent, tentatively set by the Interstate Commerce Commission, has yet been realized.

In my opinion two things are required in this regard. One is to raise the contemplated rate of return to a materially higher figure than has yet been set. Does not that certainly seem justified in view of the fact that returns of seven and eight per cent on such utilities as gas, electric light and traction properties have repeatedly been declared reasonable, and that such institutions as national banks, which were under governmental regulation and supervision long before the railroads, are permitted and encouraged to earn returns far higher still?

The second requisite, after having raised the proposed return to an adequate level, is to instill into our regulative bodies the confidence, courage and initiative necessary to make such return a reality. When, and if, that is done—and it will have to come gradually—railroad management will be unfettered, and will be again in a position to exercise its true functions properly, and what we call the "railroad problem" will cease to trouble the American people.

The question all harks back to further education and enlightenment of public opinion, and to increased insistence by the business and professional circles of the country, upon recognition of the fact that our national prosperity in the long run can only rest fundamentally and soundly upon the basis of progressive and prosperous transportation.

Character of Past Physical Development of the Railroads

This society held its third annual meeting at Altoona in 1883, or 42 years ago. Forty-two years ago the pioneering era, at least in the East, was nearing its end and our railroads were considerably more than one-third built, in so far as length of line mileage is concerned. The progress which has taken place since that time has largely consisted in steadily continued improvement of the plant, such as additional line and tracks and enlarging old and building new yards, and in the more intensive and concentrated use of facilities. This, of course, has been particularly true in the last ten or fifteen years, during which the construction of new line has been only very slight, while the additions to the previously existing plant have been enormous.

In the forty-two years line mileage has increased about 150 per cent and the capital has about tripled, while the use of facilities, or volume of railroad service rendered, measured in ton-miles and passenger-miles, has been approximately multiplied by ten. The freight train miles have less than doubled, but the tons per train have been multiplied by four, and the length of the haul for each ton of originating freight considerably increased.

Leading the World

These comparisons, in necessarily very round figures, outline the story of railroad development in the last four decades. They reflect, of course, the achievements with which we are all familiar —far more powerful locomotives, larger and stronger cars, and longer trains, together with heavier rails, improved roadbed, strengthened bridges, larger yards and improved structures generally, necessary to handle mass transportation on a constantly growing scale. In all of these achievements the railroads of our country have led and are leading the world, which accounts for the fact that we have the cheapest rates, the best service and at the same time pay the highest wages.

Future Controlling Factors of Transportation

Looking to the future of American transportation, we have several controlling factors to consider, and, if we are to form accurate conclusions, must properly interpret their reaction and interaction upon one another.

The first of these factors, in my judgment, is that the present mileage of our railroads covers pretty thoroughly those portions of the country most desirable and readily adapted to economic exploitation, *i. e.*, the portions naturally suited to agricultural, industrial or mineral development, and to the support of large centers of population. It is true that there still are great areas within the national boundaries not traversed by rail lines. Examination, however, will show that these consist almost entirely, if not altogether, of the very rugged mountain regions or desert and semi-desert sections. Practically all of the naturally arable land of the United States, and a very large proportion of that capable of development by irrigation, is now accessible by rail. That is true also of our timber lands and of most, if not all, of our valuable mineral deposits, including coal and oil. Indeed, as we are well aware and should not hesitate to acknowledge, some of the latter are doubtless developed at the present time beyond needs immediately in sight.

We, therefore, have a picture of a great nation already liberally supplied with lines of railroad communication readily adapted to such further development as the progress and growth of the country may require. A glance at any railroad map will confirm this viewpoint.

The second factor broadly bearing on the transportation future is the motor vehicle. As a railroad man, I have not the slightest

fear in admitting that for many purposes motor cars are capable of furnishing short-distance transportation to better advantage, and with greater economy and efficiency, than by rail. The country as a whole, however, I think is coming to the realization that the motor car's true function, especially as a commercial carrier, is chiefly as a feeder of the railroads and as a connecting link between the existing rail lines. Save in rare instances, it is, and must indefinitely remain, a far less efficient, less satisfactory and less economical instrument than the railroads for long-distance or bulk transportation of either passengers or freight. Incidentally, I wish to express the further view that, in the long run, motor cars, through the vastly increased business activity, which they have brought about in so many directions, will create for the railroads much more new traffic than they will ever by any possibility take away through direct competition. Indeed, they have been doing this ever since they became an important influence in the manufacturing and transportation fields. The real problem as between railroads and motor cars is not one of competition but of co-ordination, to the end that each of these agencies of transportation may be free to develop and progress in its proper field, and in that manner best serve the public needs.

The third factor for consideration is air transport, still largely an unknown quantity. If I were to hazard a guess, however, it would be that its commercial development, as an agency of passenger service will, for at least a long time in the future, be confined to very high grade de luxe transportation for people willing to pay necessarily high rates in return for exceptional speed, the saving in time and the novelty and distinction of a mode of travel open only to the few.

As a carrier of goods, air transport is quite likely to develop, on a considerable scale, in the field of high-class mail and express, and perhaps certain forms of very valuable freight. In all of these respects it seems to promise the creation of a new superluxurious transport field of its own rather than to threaten a very serious invasion of the fields already occupied by the railroads. Nor should we lose sight of the fact, which is now pretty clearly established by the experience in Europe today, that in the stage of evolution now reached or in sight, extensive air transport is, at present, only possible on a commercial basis when aided by government subsidies or guaranties.

Considering these three physical factors, which I have indicated—namely, the present broad development of the railroads, and the probable effect upon them of motor and air transportation—I am therefore inclined to think that we are unlikely ever again to see any very rapid increase in the existing line mileage of the railroads.

How the Railroads Will Develop

This, however, is very far from meaning that we are approaching the end of railroad betterment and improvement. On the contrary, the field for advancement is to my mind greater than ever before. There is almost unlimited opportunity, and not only opportunity but need, for the continuance, on a greatly augmented scale, of the intensive development of the established lines. Millions of dollars will be needed, and are needed now, to provide the additional double tracking which nearly all systems require, and the quadruple, sextuple and even higher forms of multiple tracking which to a constantly greater extent our important trunk lines are certain to need in order to keep up with increased production and with the constantly growing commercial activity and more frequent travel which are so characteristic of the business and social life of the country.

New, enlarged and improved passenger stations are needed at this very day for many communities, both large and small. Many more will be required as time goes on. Curvature should be eliminated on important lines, bridges strengthened, grades lowered, and the work of separating grade at highway crossings be continued with a fair and reasonable division of the expense between the railroad affected and the community benefited. Although locomotives have been vastly improved, particularly in the last two decades, there is still a great field for further progress in this direction, and equally so in the further adoption of improved operating methods, which will enable us to make better use, at all times, of the available motive power. Last, but by no means least, there is the great and, as yet, little touched field of electrification, which in future years should, and will, be extended where conditions economically warrant that step.

It is, of course, needless for me to say that no program of progress can be realized at all without adequate funds, and that brings us back once more to the fundamental problem of railroading, which is that of stabilizing credit by raising the investment return permanently to an adequate level, which of course means increasing the net earnings. In the last fifteen years the return on property investment in the railroads of the United States has barely averaged 4 per cent. Only once has it risen to 6 per cent, and on one or two occasions it has very nearly approached the vanishing point. The great task and duty of regulation is to improve that condition, and our regulative authorities, if they are to have the courage to do so, and if they are to pursue a constructive course, require absolutely the strong backing of public opinion, and particularly of our business men and of the professions identified with transportation. It is no more than just to add that the regulative authorities, on their side, quite properly require from railroad managements continued efficient operation, and the rigid elimination of all waste. Happily, I believe the situation warrants genuine optimism, and is far more encouraging than at any time in our generation.

Inland Canals Now Obsolete

To summarize, therefore, my view is that the future physical development of American railroads will center upon a vast program of intensive improvements and betterments, with ultimately what may amount in some instances to almost a complete rebuilding of the existing plant, while extensions into territory not yet occupied by rail lines will go ahead very slowly, if at all.

Communication between the existing rail lines, as well as in territory not now served by them and not warranting rail extensions, will, I believe, be chiefly taken care of by motor cars on improved public highways.

Lastly, for those who have the price to pay, air transport will establish new straight lines from city to city, and doubtless across both the oceans which wash our shores.

Incidently, I expect to see the last vestiges of commercial traffic on inland canals disappear from the United States, and all fanciful projects for canalizing rivers not naturally navigable relegated to oblivion. In a nation so plentifully supplied with railroads with their exceptionally cheap rates, for the service rendered, having practically a motor car for every family, and holding the pioneer honors in the art of flying, such a slow, cumbersome, easily interrupted, expensive and inefficient method of transportation as is afforded by artificially constructed and maintained inland waterways—often closed for half the year by climatic conditions—can no longer have a real place.

The Task of Co-ordination

Co-ordinating the various forms of our permanent agencies of transportation will be a gigantic task, but one not impossible of solution, especially in light of the new views now prevailing, which, unfortunately, have completely reversed the old theories once held as to the danger of permitting mergers or consolidations. In the railroad field, consolidations are now declared by law to be the national policy, where once they were largely forbidden. At one period we worshipped enforced competition as a fetish. Now we know that competition has only such value as practical experience may demonstrate, and is now largely confined to service.

Personally, I believe that a proper degree of competition is and will continue to be necessary among the railroads themselves, as well as between the railroads and the other agencies of transportation. This is a requisite if we are to keep the spirit of initiative and invention up to the highest pitch, and so render possible the continued progress of the transportation art. But competition which merely means useless duplication of facilities and service is a waste, the cost of which is ultimately borne by all users of the service, in addition to which investors in the long run usually suffer partial or total destruction of their capital.

Consolidation

I have publicly stated many times, and take this occasion again to say, that I am thoroughly in sympathy with the general proposition that it is desirable to concentrate our American railroads into a comparatively small number of large systems. As a matter of fact, in my experience on the Pennsylvania Railroad I have been engaged in effecting many mergers and consolidations, extending over a long period of time. By them we have throughout the life of the company succeeded in bringing down the total number of active companies which have in the past aggregated something over 600 to approximately 70. So, you may see that our company and I personally have advocated and practiced consolidation for many years, in so far as state and national laws permitted.

I am, however, definitely opposed to any movement looking toward putting consolidations into effect on an arbitrary or forced basis; or to any thought that intelligently planned, conservatively financed and properly managed railroads should be penalized by being made to bear the burden of losses incurred in the operation of lines which, perhaps, should never have been constructed at all. In this connection, I heartily commend the views of President Coolidge and the stand which he has taken upon this subject, and has made known through the columns of the newspapers, which is, briefly, that voluntary and permissive consolidations, with the encouragement and assistance of the governmental authorities, and coupled with proper safeguards for the public interest, constitute the sound and proper method of procedure.

The Transportation Industry and the Engineer

By S. P. Bush
President, Buckeye Steel Castings Company

It is significant that just at this time the president of the Pennsylvania Railroad, Samuel Rea, an engineer administrator, is retiring after a service of 54 years. To his vision, courage and intelligence, to all of those railway administrators, some of whom have been engineers, to those who have brought our railway system to its present state of high development, and to the engineer, the country owes much, and personally I feel that to my experience and association with the Pennsylvania Railroad, and to my engineering education, I am very much indebted.

Originally, and before the days of the application of steam, ours was a maritime country and enjoyed world-wide pre-eminence as such for many years. The trained engineer played a very small part in the construction and operation of our sailing ships, in which was transported approximately 60 per cent of the world's commerce. With the introduction of the steam engine Great Britain assumed the leading position, and the maritime interests of this country were gradually reduced to very small proportions. Subsequently the country became mainly agricultural, but of recent years great changes have taken place.

The real development of transportation and industry in this country may be said to have commenced about the time of the Civil War, or about sixty years ago. This war and previous experience made it clear that it was essential for this country to be independent of the rest of the world in the production of all those things that are essential to the national defense. To this end a protective tariff policy was inaugurated by Congress so that our natural resources and manufacturing might be stimulated to profitable development.

In 1900 the total wealth of the country was estimated at 88½ billion dollars. In 1922 it was estimated at 320 billion dollars, which is sufficient to indicate how rapid and extensive our economic development has been. At the present time the railways of the country, either directly or indirectly, consume 25 to 30 per cent of all the steel production, and about 25 per cent of all the bituminous coal. They require a greater variety of commodities and service than any of our economic groups. They operate two and a half million freight cars and transport annually 2,300,000,000 tons of commercial and 950,000,000 passengers.

A division of the people into definite economic groups as a result largely of the transportation development, has brought to the front and to some extent visualized to them the dependence of each group upon the others, and particularly the fundamental importance of transportation as a basic industry. Industry, by which is generally meant manufacturing, as the result of governmental policy and the development of transportation in this country, has now become the greatest as measured by the value of production, and we are to-day the leading industrial nation of the world.

But while the engineer has done much toward the development of industry, particularly in recent years, I think it is within the truth to say that the larger part of our development has been accomplished by men who have not had the advantage of such institutional education as the country has afforded in recent years. To-day the scientist and engineer are indispensable to most of our industrial and transportation development, which offer fertile fields of endeavor, both technical and administrative.

Co-ordinating Education and Industry

On the suggestion of several industrialists, the National Industrial Conference Board, one of the most important research bodies in the United States, is now engaged, through a committee of industrialists and scientific educators, in ascertaining in what way engineering schools may assist in the better training of men for industry, and in what way industry may assist engineering schools. Many industrialists feel that graduates from technical schools have not received quite the right training or been given quite the right outlook. It has for a long time been a question as to how this might be done, and it is the purpose of the Conference Board to ascertain, if possible, the best course in this respect. It is significant to note that this industrial research body is supported liberally and exclusively by industry, and has in its governing body and membership a number of engineers who deal almost entirely and in a broad way with the economic aspect of all the groups that go to make up the national life, to the end of aiding economic and social progress and stability. This is a matter in which I am sure your Society must have a very considerable interest.

In this connection I might mention that the Pennsylvania Railroad and some few of the larger industries in this country, have for many years maintained a special apprenticeship course for graduate engineers, to the end of developing superior men, both technicians and administrators, and with excellent results, but since the World War there seems to have been considerable disinclination on the part of graduates to this rougher preliminary service as generally as before, much, I believe, to their own disadvantage and to the best interest of industry and the engineering profession.

A Broad Field for the Engineer

As further illustrating the wider field open to the engineer, I recall that shortly after the war, when the economic condition of industry in this country was chaotic and badly out of balance, and probably required to face more severe competition and greater economy than heretofore, Secretary of Commerce Hoover, himself an engineer, desiring to ascertain the real facts in the case and what might be done to put industry on a better basis, appointed a commission of engineers to investigate and report, the result of which some of you are probably familiar with. It was significant, although not extraordinary, that he should have selected engineers to undertake this task, for the engineer's work is very largely that of honestly and truthfully finding, recording and facing facts. It was probably not within the scope of this commission's work to relate the condition they found in the industrial field, with those of others, but I think it must be clear that this relation not only exists but is at the bottom of our economic fabric, and it would seem that the engineering profession as a group, in its own interest, as well as that of the general welfare, might interest itself more widely in the national aspect of this relationship. Reduced to the smallest possible terms the substance of this commission's report was the elimination of waste through specialization, standardization and stabilization.

President Rea of the Pennsylvania Railroad, in a recent statement, has said that he believes the opportunities for young men to succeed in railroading are better to-day than ever; that a higher class of mental aind physical equipment for leadership are required than fifty years ago; that while the development of railroads might not be in opening up new territory the necessity for new and better methods is more urgent than ever. Revenues must be increased, expenses reduced, waste eliminated. No branch of the service is freed from the necessity of invention and progress of that character. I might add that the same may be said of industry.

These statements and facts I believe to be of interest to the engineering profession as a group, believing as I do that men with the proper training and outlook are much needed in industry, and that technical and scientific education furnishes the best foundation on which to build for both the technician and administrator in transportation and industry.

If I were to suggest to any group one thing more needed than anything else at the present time, and which I believe will be required in the future, it would be a broader vision and a far wider consideration of all the groups essential to development in the future commensurate with that of the past. All groups heretofore have been too prone to concentrate their interest on their own particular problems and have failed to realize the economic dependence of one upon another.

Take General Welfare Into Consideration

This is directed particularly to the administrator, but I would point out to the engineer as well that the field of his endeavor for his own material welfare must necessarily be restricted and progress retarded unless each group exerts some influence in effecting the economic welfare of all the other groups by discouraging those proposals and efforts sometimes enacted into law, which puts one group or another at a serious disadvantage, or gives one group an undue advantage over others.

Mr. Rea, in the statement which I have referred to, points out that "the greatest stride in the railway transportation industry in the matter of sound finance and service, took place between the years 1899 and 1907, when railway management was far less restricted than at present. Since 1907 railway development has been seriously retarded until recently, through the application of much injudicious governmental policy." He states that in all business questions affecting the railroads he feels sure that the best satisfaction would be given to both railroad owners and the public if the process of interfering with the responsibility and judgment of managements should be halted and public regulation used as an impartial medium for adjusting or avoiding difficulties between railroad users, railroad owners and the managers, with a view of providing service without discrimination and at the lowest compensatory rates.

If transportation can not be conducted successfully and profitably the engineer and industry would have a very meager field

of endeavor, and it would seem that the maintenance of the transportation industry on a sound and profitable basis is a matter that should concern us even more than some of the technical problems to which we devote so much of our time and interest. Transportation, as well as agriculture, is seriously handicapped, and the purchasing value of its services or product as the result of continuing high wages of labor with high consequent cost, effected to a very considerable extent by governmental policy during the war, has been considerably less than before the war.

The effect of this condition is to put our economic structure out of balance to the detriment of the entire country. Were it not for the enormous resources of this country our position might easily be serious.

Is it out of place to suggest that engineering groups, through their various organizations, might make themselves felt in influencing a policy that will prevent the depletion of a great basic group to the disadvantage of the whole? We in industry have been compelled in our own interest to exert ourselves actively in this and similar matters. Deplete the earning and purchasing power of transportaton or agriculture and industry and all other groups suffer.

What Are the Opportunities for Eliminating Waste?

As has already been said, one of the problems to be met in the future is the elimination of waste or of effecting more economic operation and stabilization. Much has been accomplished in this direction of late, but there is vastly more yet to be accomplished, and the need extends into every avenue and detail of our economic structure.

Transportation and industry operating under the necessity of developing not only a living wage but some profit through which alone progress and development may continue, under our highly competitive conditions, needs men to point the way and to develop the method, and as I have already pointed out, the engineer must necessarily play a highly important part. The Secretary of Commerce, Mr. Hoover, is conspicuous in this. Without going into too much detail may I suggest a few possible avenues?

Has steam railway motive power seen its final development as to economy of performance?

Has the dead weight of transport vehicles and train resistance been reduced to an irreducible minimum? It appears that we are yet far from it.

Has the life of rails, ties, wheels and axles, and many other things, been brought to a maximum impossible to exceed, and their cost consequently reduced to a minimum? It would seem not.

The Importance of Stabilization

Here are a few problems for the technician of both transportation and industry:

Has the best labor result and cost yet been developed in industry and transportation, or has the greatest incentive to labor yet been found and applied in a general way, or has the best relation between labor and management been arrived at generally?

Can not the enormous wastes arising from violent, but in a way normal, fluctuations in production and employment of labor and capital be seriously grappled with?

If there is one thing more than anything else essential to a sound national life, it is that the people shall have steady and fairly remunerative employment.

The Waste of Unemployment

Upon investigation made just before the war—and similar conditions have prevailed largely since—it was found that the steel industry as a whole, with its enormous investment and large force of employees, was occupied but 70 per cent of the time; that the bituminous coal mining industry was operating on but 50 per cent of its capacity; that the car and locomotive building industry was operating on an average but 65 to 70 per cent of the time. In the car building industry and the industry in which I am engaged, business has fluctuated from an operation of 10 per cent to that of full capacity. This represents an enormous waste and affects seriously the employment and morale of the worker. Employment and progress in industry and transportation without profits are impossible and profits are impossible without the continuous elimination of waste.

These are problems for the administrator and technician which in the light of present day conditions of national and international character, make many other things appear insignificant. The man with scientific training and with practical experience is, in the opinion of many, best equipped to meet these problems.

Mr. Hoover's committee of engineers summarized the result of their investigation as to what was needed in three words: "Specialization, standardization and stabilization."

It must be clear that if we are to have sound progress, balance and stability are essential factors in all of our life and development, and as a principle no one ought to understand this better than the engineer. Here are essential elements not only to higher economic development but to social peace and progress.

Engineers Must Develop Broad Vision

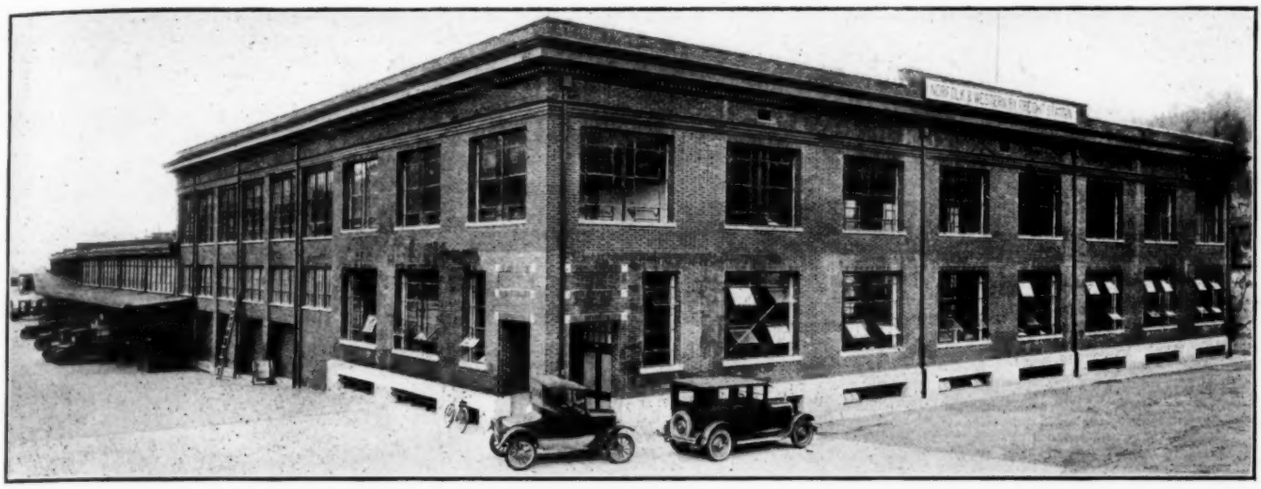
We in industry have come to a partial realization at least of the fact that not only must we work out the problems of industry as such, but we must also see the problems in other groups, such as transportation, agriculture and education, and assist them in their solution. Industry in order to meet the problems of the future is going to need, generally speaking, more men of broader vision than heretofore. Scientific education, revised somewhat to meet the more complex conditions in order to assist in producing such men, would be highly desirable. If the organized engineering groups could lend their influence in support of sound economics it would be very helpful.

A. J. County's Address

A. J. County, vice-president of the Pennsylvania Railroad, briefly sketched the history of the development of the Pennsylvania System from a railroad 244 miles long, built within the confines of the state of Pennsylvania 71 years ago, to a system of over 11,000 miles of line extending to Atlantic seaboard to the Great Lakes and the Mississippi. He told of the struggle of the promoters to secure a charter and how a house-to-house canvas was made in Philadelphia and Pittsburgh in selling the stock of the new company. In dealing with the financial structure of the system he spoke in part as follows:

"It was the desire of the promoters of the Pennsylvania Railroad to build it through the sale of capital stock rather than to have recourse to bonded debt, so as to avoid receivership in periods of business depression and retain for the stockholders the steady earnings and equities of the property. They were successful to a marked degree, as they were able to complete all but the Mountain division through proceeds from the sale of capital stock before it became necessary to sell bonds. With large earnings it obtained sound credit, and it buttressed that condition by pursuing the policy of spending the larger part of the earnings over fixed charges and dividends for betterment of the property and equipment instead of piling up its bonded debt. In fact, for many years the company put as much of its surplus earnings back into the property for improvements as it paid out in dividends. Let the facts speak for themselves: Here is a property which represents an investment of $2,416,000,000 for road, equipment and marketable assets. Against this there is a total issued capital at par of $2,116,000,000 outstanding, but the public holds only $1,545,000,000, the balance of $571,000,000 being owned by the corporations in the System, chiefly The Pennsylvania Railroad Company. This conservative capitalization is the principal reason why, when the net railway operating income is equal to only 4 per cent. or less on the total property investment, 6 per cent. dividends have continued to be paid.

"Little did our predecessors realize that the adoption of this sound policy of financing was to be so helpful in carrying the Company through many depressions, periods of labor unrest, antagonistic legislation, Government regulation, the World War, and Government operation of the railroads, all of which have at one time or another placed a strain on our System that might have had serious results had not the capital structure been on a firm foundation."



The Office Building Is a Distinctive Feature of the New Station.

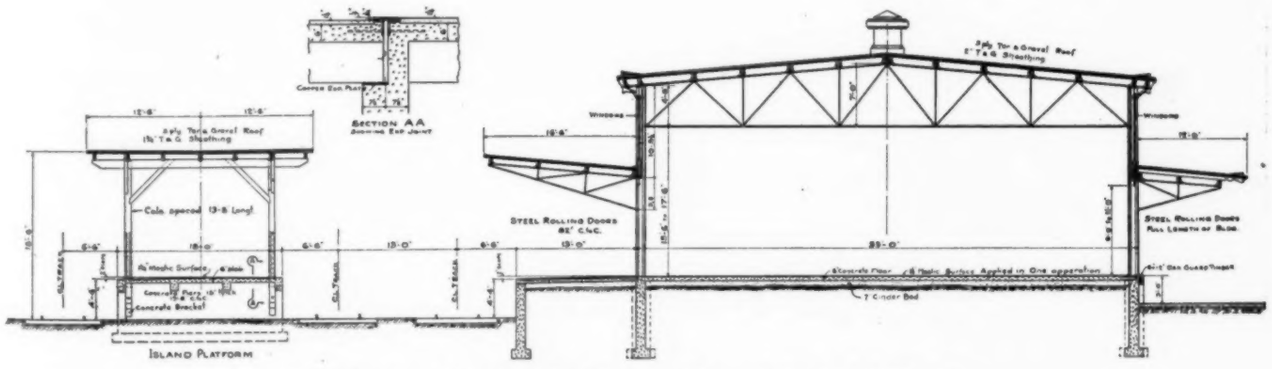
Norfolk & Western Builds Freight Station at Bluefield

Wareroom space increased from 6,000 sq. ft. to 37,000 sq. ft. with corresponding increases in other facilities

By Loomis L. Kelly
Bridge Engineer, Norfolk & Western, Roanoke, Va.

THE rapid development of the Norfolk & Western coal fields is reflected in the growth of Bluefield, W. Va., the headquarters of the Western division of that road and the primary assembling point for eastbound coal movement. Thus in 1884 when a freight station was first established to take care of the local requirements of that city, the total business for the first year was 1,154 tons, whereas the new freight station recently placed in service at Bluefield has a capacity of 500,000 tons per annum. The old facilities had been increased in capacity from time to time but proved inadequate and in 1923, after careful consideration, it was decided to abandon the old freight station and construct new facilities on a new site, which was purchased for this purpose. This comprises an area of approximately 12 acres on the north side of Bluefield avenue, between Lynn street and Hales crossing, a distance of 3,600 ft.

A contract for the building excavation, tracks and other facilities was let to the Walton Construction Company, Roanoke, Va., and work was started on March 1, 1924. The excavation was completed about the first of September. In the meantime, a contract for the construction of the building, platforms and paving was awarded to J. P. Pettyjohn & Co., Lynchburg, Va., and this work was started on September 8, 1924. The station was completed on August 1, 1925. The new facilities include: A two-story office building, an auditorium, five large warerooms, three island platforms, loading and delivery tracks, an



Cross Section of the Freight House and One of the Island Platforms

automobile platform, a team track and a classification yard.

Provide a Modern Office Building

The office end of the building is a two-story fireproof structure 50 ft. wide by 140 ft. long, with basement. It has a vault 18 ft. by 21 ft. on each floor, and is constructed of brick with reinforced concrete columns, floors and roof slab. In the basement are located lavatories, a timekeeper's office, record and store rooms and the heating plant. The entire first floor is occupied by the agent and his clerks. The second floor will not be needed by the freight agent and will doubtless be assigned to some other department.

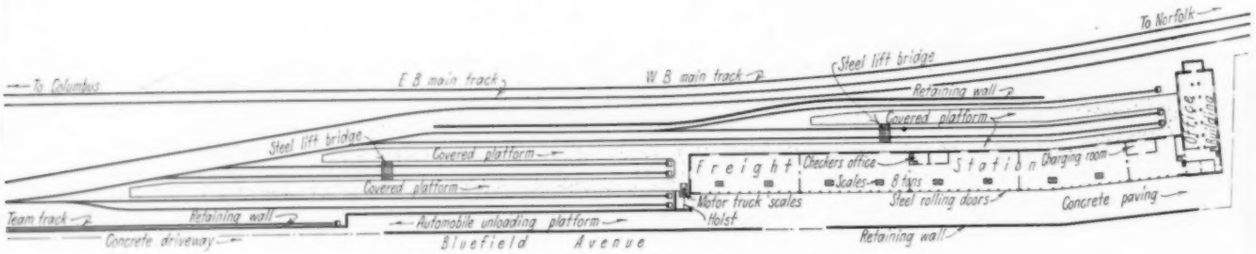
There are automatic fire doors to protect all openings from the office to the auditorium and warerooms. All windows in the office portion of this building on the track side have Fenestra steel sash of a reversible ventilator type. The windows on the track side are glazed with ¼-in. polished wire glass on account of the exposure, and on the street side are glazed with ¼-in. polished plate glass.

The Offices Are Well Lighted

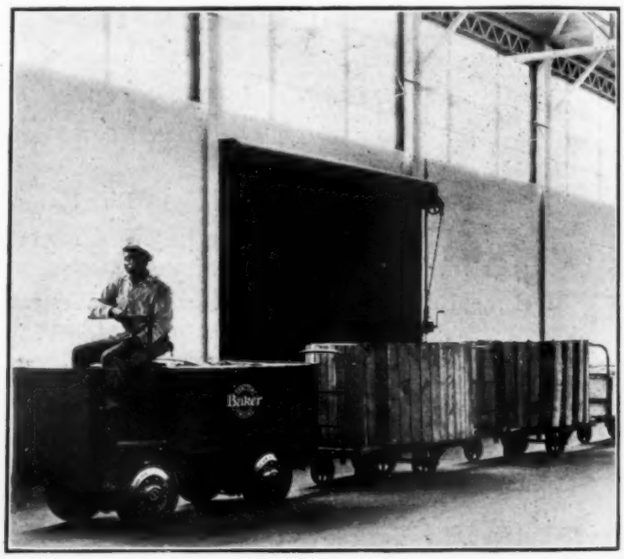
The reinforced concrete floors have a Kalman process cement-wearing surface and are designed for a safe live load of 125 lb. per sq. ft. The reinforced roof slab is designed for a live load of 50 lb. per sq. ft. and is covered with Barrett five-ply 20-year built-up tar and gravel roofing.

The portion of the building for the storage and handling of freight is 55 ft. wide by 683 ft. 5 in. long, divided into five sections, four of which are approximately 150 ft. long by 55 ft. wide each, and one section 82 ft. by 55 ft., which is used for storing unclaimed freight. A portion of this section is partitioned off for charging electric tractors.

The warerooms have concrete foundations, a structural steel frame and brick walls. Separating each room is a 13-in. brick fire wall, in the center of which are two 10-ft. openings protected by steel automatic fire doors. The side of the building adjacent to the street has rolling steel doors for its entire length, so that freight can be received or delivered at any point desired. On this side there is also an over-hanging shed 12 ft. wide, for the full length of the building, to protect goods received and delivered in wet weather. On the track side there is a 13-ft. platform protected by a 16-ft. shed. There are two 13-ft. doors leading from this platform into each room. The floor of the wareroom and platform is composed of a 6-in. concrete base with 1¼-in. mastic wearing surface which rests on earth fill that had previously been rolled with a 10-ton road roller. The roof trusses are steel, with wood sheathing covered with a Barrett five-ply tar and gravel roof. The warerooms are lighted by steel sash windows seven feet high for the entire length of the building on both sides, glazed with ¼-in. rough wire glass. These rooms are well ventilated by the use of 36-in. ventilators placed 40 ft. apart.



Track Layout and Plan of the Freight Station



Electric Tractors with Trailers Reduce the Cost of Handling Freight

Each wareroom has two Toledo dial scales of 8,000-lb. capacity, and at the west end of the building there is a 15-ton platform scale for weighing machinery or other

heavy freight. To facilitate the handling of these heavy pieces, an I-beam trolley was installed which extends over the scale and hangs out over the driveway. On this trolley is a chain hoist of 15 tons capacity for raising and lowering material which is received from and delivered to trucks.

Island Platforms of Reinforced Concrete

The island platforms are 18 ft. wide, with lengths of 465 ft., 490 ft. and 725 ft., respectively, and are constructed

A Wide Driveway Flanking Blufield Avenue Obviates Interference with the Street Traffic

of reinforced concrete, two having a 1¼-in. asphalt mastic wearing surface and the third a 1-in. Kalman process cement wearing surface. Each platform is covered with a flat roof which extends 3½ ft. beyond each side of it. This roof is supported by columns placed along the two sides of the platform with a longitudinal spacing of 13 ft. 8 in. center to center. This length of span was decided upon because the average length of box cars is 41 ft. or three column spaces, so that with this spacing it is rare that a column comes in front of a car door. To take care of the expansion and contraction in the platform floors a one-inch joint composed of angles and a feather-edge steel sliding plate has been provided every 100 ft., making a very satisfactory arrangement. Near the ends of the platforms two steel drawbridges have been provided to connect the platforms over the tracks so that the trucks and trailers can make a complete circuit without having to turn around on the platforms.

A Large Automobile Platform

This station is also provided with an automobile unloading platform 200 ft. long by 25 ft. wide with a ramp at either end. In addition, there is a team track with a capacity of 40 cars. Along the entire length of the station, automobile platform and team track there is a paved driveway of ample width to accommodate the street vehicles at the station so that they do not interfere in any way with traffic along Bluefield avenue. This station and platforms are served by seven tracks having a total capacity of 133 cars. The layout also includes a classification yard, with a running track and three storage tracks having a capacity of 18 cars each.

To construct these tracks and the building required 100,000 cu. yd. of excavation, 10,000 cu. yd. of concrete, 550,000 brick, 9,500 sq. yd. of concrete and brick paving, 65,000 sq. yd. of mastic floor, 26,500 sq. yd. of Kalman cement floor surface, 450,000 lb. of structural steel, 110 squares of tar and gravel roof, 18,000 lin. ft. of track, 10,000 sq. ft. of steel sash windows, and 10,000 sq. ft. of steel rolling doors.

Use Electric Tractors

The station has been provided with four Baker four-wheel tractors equipped with 24-cell, 21-plate batteries with two-wheel drive and four-wheel steer. These tractors have a draw-bar pull for continuous operation of 400 lb., with a maximum draw-bar pull of 2,000 lb. They will travel with a load of 20,000 lb. at the rate of four miles per hour, or without load at six miles per hour. By having a four-wheel steer they can turn in a circle with a seven-foot radius. These tractors will readily handle 10 to 15 trailers. For use with these tractors, 250 Mercury four-wheel trailers, of 4,000-lb. capacity have been provided. Both tractors and trailers have automatic couplers. In addition to the above, there are two Steubing lift trucks for handling platforms and five dollies for lifting heavy machinery, etc. The tractors are all charged at night, and are capable of working all day with the one charge.

Interior of the Inbound Section of the Freight House

At the old freight station the area of platforms was 14,000 sq. ft. At the new station it is 40,000 sq. ft. The area of wareroom at the old station was 6,000 sq. ft.; at the new station it is 37,000 sq. ft. At the old station all

freight was handled by hand trucks, and required the employment of 36 clerks and 68 laborers. The new station requires 34 clerks and 36 laborers. The cost of handling freight at the old station was approximately 83 cents per ton. At the new station this cost has been cut to 45 cents per ton. Freight handled at the old station in 1924 totaled 125,779 tons, while the capacity of the new station is estimated at approximately 500,000 tons per annum. Of the freight handled at this point about two-thirds is local and one-third is transfer from car to car.

Detailed plans of this freight station were prepared in the office of W. P. Wiltsee, chief engineer, under the direct supervision of the writer. The engineering in the field was under the supervision of O. V. Parsons, assistant engineer.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended September 26 amounted to 1,120,645 cars, an increase of 32,691 cars as compared with the corresponding week of last year and of 23,152 cars as compared with 1923, although this was slightly less than the record of 1,124,436 cars established in the last week of August. Miscellaneous loading reached the high figure of 440,189 cars, an increase of 35,194 cars as compared with the corresponding week of last year, and coal loading, 178,463 cars, showed a decrease of only 15,737 cars as compared with last year in spite of the loss of anthracite loading due to the strike. The Eastern and Central Western districts were the only ones to show a decrease as compared with last year and grain and grain products and coal were the only classes of commodities to show a decrease. Livestock, which for some time has been less than in the corresponding weeks of last year, showed an increase of 45 cars.

The freight car surplus showed a further decrease in the week ended September 22 to 150,453 cars, including 63,320 coal cars and 61,349 box cars. The Canadian roads for the same period had a surplus of 14,078 cars, including 11,215 box cars.

The summary, as compiled by the Car Service Division of the American Railway Association, is given in the following table:

REVENUE FREIGHT CAR LOADING, WEEK ENDED SEPTEMBER 26, 1925

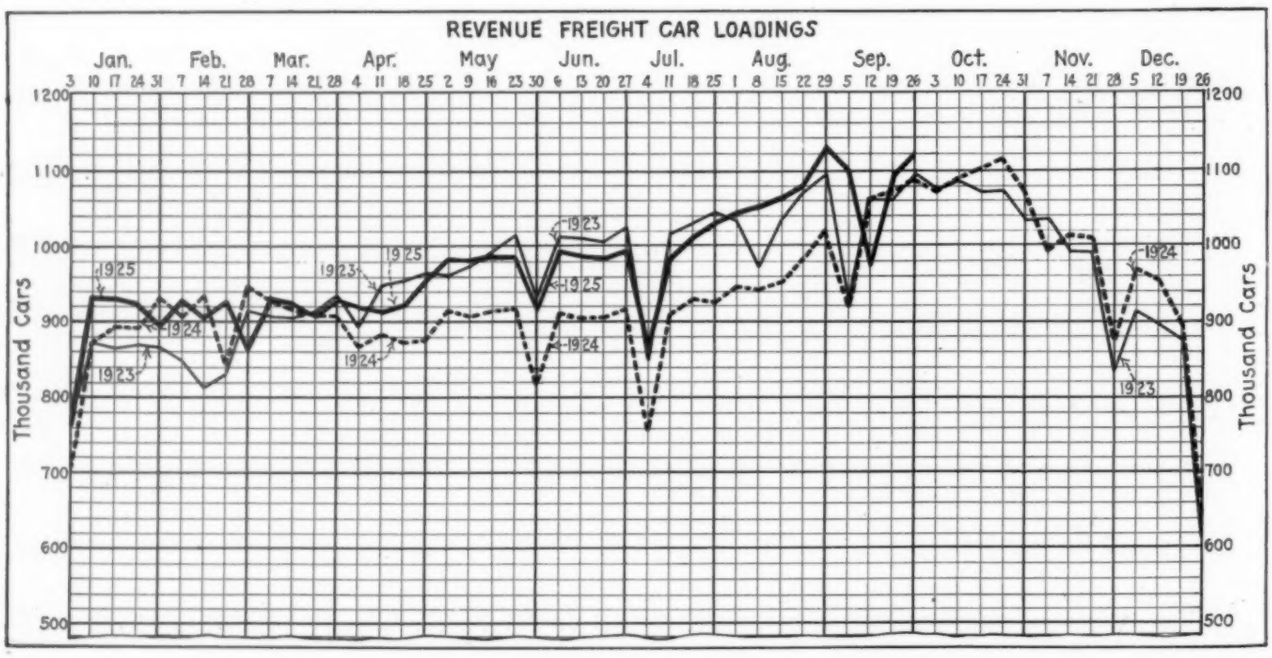
Districts	1925	1924	1923
Eastern	247,582	250,392	257,644
Allegheny	216,055	216,032	224,171
Pocahontas	59,258	49,420	45,460
Southern	166,688	148,616	145,789
Northwestern	175,516	166,576	182,519
Central Western	179,185	181,238	168,626
Southwestern	76,361	75,680	73,284
Total Western	431,062	423,494	424,429
Commodities			
Grain and grain products	55,199	69,310	50,885
Live stock	36,805	36,760	41,101
Coal	178,463	194,200	200,955
Coke	11,772	9,391	12,936
Forest products	72,100	68,654	75,497
Ore	55,774	46,176	69,264
Mdse., l. c. l.	270,343	258,468	253,220
Miscellaneous	440,189	404,995	393,635
Total	1,120,645	1,087,954	1,097,493
September 19	1,098,428	1,076,847	1,060,811
September 12	975,434	1,061,781	1,060,563
September 5	1,102,946	921,303	928,916
August 29	1,124,436	1,020,809	1,092,150
Cumulative total, 39 weeks	37,846,925	35,701,943	37,303,239

Car Loading in Canada

Revenue car loadings at stations in Canada during the week ended September 26 were the highest for any week in the past three years or since this data are available. The heavy grain loading was the chief factor in this increase over the previous week's loadings, being 2,167 cars over the week before and 6,607 cars over the same week last year.

Other commodities showed increases over loadings of both the previous week and the same week last year.

Commodities	Total for Canada: Sept. 26, 1925	Sept. 19, 1925	Sept. 27, 1924	Cumulative totals to date: 1925	1924
Grain and grain products	22,427	20,260	15,820	260,480	295,293
Live stock	2,817	2,625	2,631	88,276	86,061
Coal	6,640	6,525	6,065	141,972	194,767
Coke	372	307	222	10,809	8,778
Lumber	3,876	3,574	3,549	138,262	140,146
Pulp wood	1,813	1,685	1,372	106,854	106,068
Pulp and paper	2,121	2,178	1,888	78,651	76,781
Other forest products	2,348	2,299	2,053	109,388	101,023
Ore	1,793	1,881	1,761	53,556	49,106
Merchandise, l. c. l.	16,557	16,106	16,046	589,640	561,995
Miscellaneous	15,675	15,578	14,653	480,335	460,474
Total cars loaded	76,439	73,019	66,060	2,058,223	2,080,492
Total cars received from connections	34,375	31,948	32,008	1,281,487	1,235,879



Denial of N. Y. P. & C. Application Recommended

WASHINGTON, D. C.

DENIAL of the application of the New York, Pittsburgh & Chicago for a certificate of public convenience and necessity for the construction of a new low-grade railroad across the state of Pennsylvania is recommended to the Interstate Commerce Commission in a report proposed by Assistant Director C. V. Burnside of the commission's Bureau of Finance and Engineer Examiner Edward Gray, made public by the commission on October 5. The report recommends, however, that the application should be denied without prejudice to resubmission with additional support and upon a record that will give "broader consideration to the public interest," including a suggestion for construction of such a line in the joint interest of the existing carriers.

The application was for authority to construct, under charters owned by the estate of the late E. H. Harriman, represented by L. F. Loree, president of the Delaware & Hudson, a line from Allegheny City to Easton, Pa., 283 miles, to provide a direct low-grade route between New York and Pittsburgh for through traffic between New York Harbor and the West, and two branch lines, from Allegheny City to North Sewickley, 31 miles, and from Pittsburgh Junction into the industrial district of Pittsburgh, 30 miles, at an estimated cost of $260,000,000. The route would shorten the distance between New York and Pittsburgh by 76.6 to 79.8 miles. After discussing the testimony and other data presented by the applicant and the objections of the other roads the report says in part:

There is no urgent need for the proposed line. The existing railroads are handling the through traffic between New York and the West in a reasonably satisfactory manner, and can no doubt continue to do so hereafter by expanding their facilities as required. Competition between them should impel them strongly to provide the necessary additions. However, the advantages of a more direct light-grade line across the state of Pennsylvania are obvious and are practically admitted by the objecting carriers. Their own projects for the future recognize at least the need of additional and supplementary routes across the state, shorter than most of the present routes. The record does not contain material for an adequate comparison of the merits of these routes with the applicant's, although it indicates the superiority of the latter, which is certainly much shorter while, no doubt, much more costly. Probably the chief advantage to the general public would be a saving in time of transport, though rates might ultimately be affected. The record deals only with commercial needs; but in view of our experience during the world war the value of such a line for military purposes is a factor that deserves consideration.

The record shows that the proposed line would have great advantages over existing routes, but is not sufficient to establish fully its economic justification, which must depend upon the extent to which the saving in transportation costs will afford return upon the capital necessary to effect that saving. In view of the large investment required, the absence of any pressing need for an additional route, and other considerations herein set out, more convincing evidence is required. While the line appears to have been projected with much ability, the record indicates that the applicant's plans are not sufficiently developed. No plan of financing is proposed.

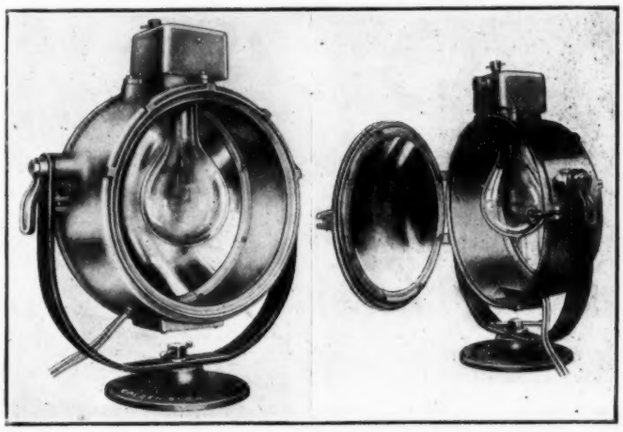
There are broader considerations suggested by the record. The construction of such a line for competition with the existing carriers should not be permitted without the careful consideration of the disadvantages as well as the benefits of resulting competition.

The competing carriers might be expected to use every effort to retain their position by increasing their expenditures in improving service and facilities on their present routes and by providing additional lines of their own, thus augmenting the investment in transportation facilities beyond the requirements of the traffic. A foreshadowing of these developments may have prompted the Baltimore & Ohio in its response to questionnaire to express the view that "if and when the construction of such a super-line is required or justified it should be undertaken by and in the joint interests of the existing carriers which, through a series of years, have developed the country to be served, and not by a new aggregation of capital which would simply compete for the business already developed." This suggestion is not further discussed in the record, but before authorizing an undertaking of such importance and involving so great an additional investment, the commission should thoroughly investigate the practicability of this proposal. As an alternative to joint proprietorship in the new line, consideration should be given to its operation by a new corporation under such conditions, agreed to by the carriers or prescribed by the Commission, as would secure to the existing carriers such measure of the advantages of the new route as would prevent the unnecessary expenditure of additional capital by them, and would at the same time secure to the public the undoubted advantages that the new line should afford.

Floodlighting Projector

THE Electric Service Supplies Co., Philadelphia, has recently placed on the market a new type of Golden Glow flood-lighting projector (known as type FLA-1419) for railroad yard flood-lighting or other similar service. This new unit has been designed to provide a simple and rugged housing, made of cast aluminum alloy in which is a standard 14 inch reflector.

The design of the body of this new projector is unique in that the glass reflector is mounted in the door which opens from the back of the case, thus providing easy access for the renewal of lamps and for cleaning the reflectors. The door closure is a series of baffles with machined surface fit which provides a simple, substantial and effective weather tight closure, without gaskets.



Front View of Projector and Rear View Showing the Door on the Back of the Case Open

This new unit provides ample ventilation through liberally designed ventilating apertures at the bottom and the top of the body. An easy and simple focusing mechanism is enclosed in the top ventilating cap, which permits focusing of the lamp entirely from the outside and without tools.

The body of the projector is mounted on trunnions in a yoke of ⅜ x 2 inch steel bar stock which may be rotated in the heavy cast iron base.

The curved front glass of the projector is of special heat resisting pressed glass, approximately ¼ inch thick.

These new floodlights when fitted with a 1000-watt, 115-volt PS-52 standard multiple burning lamp may be used successfully with maximum ranges of 3000 to 3500 feet when mounted on towers of from 70 to 90 feet in height. Golden Glow light has a soft, non-glaring character and is very penetrating.

A large number of these projectors have recently been installed in the Clifton Forge classification yard of the Chesapeake & Ohio.

General News Department

In announcing the addresses at the October 19 meeting of the Western Railway Club in the *Railway Age* of October 3, the name of A. G. Trumbull, chief mechanical engineer of the Erie, the principal speaker, was inadvertently misspelled.

The New England Railroad Club will hold its October meeting at Copley-Plaza Hotel, Boston, on the evening of Tuesday, the 13th. The speaker will be James H. Hustis, president of the Boston & Maine, who will address the club on "Looking Backward."

The next meeting of the Central Railway Club will be held on November 12 at the Hotel Statler, Buffalo, N. Y. At this meeting a paper on Main Tracking of Freight Trains will be presented by D. W. Dinan, assistant general manager of the New York Central, Syracuse, N. Y.

The Black Diamond Express of the Lehigh Valley, westbound, moving at high speed, was derailed by striking an automobile on a crossing near Geneva, N. Y., on the evening of October 5 and the whole train, locomotive and eight cars, ran off the rails. Two men in the automobile were killed and a third was injured.

The Oregon-Washington Railroad & Navigation Company has petitioned the Interstate Commerce Commission for a modification of its report of July 31 on the O.-W. automatic train control installation. The commission conditions its approval on the addition of a feature requiring the engineman to "acknowledge" at succeeding stop signals; this, says the petition, is neither necessary nor desirable.

The sixtieth anniversary of the operation of the first passenger train across Missouri from St. Louis to Kansas City was observed by the Missouri Pacific on October 2 when it called the incident to the attention of each employee and patron of the road with a card commemorating the date. The first train for Kansas City left St. Louis, over the Pacific, now the Missouri Pacific, on October 2, 1865, and made the 283-mile trip in 18 hours.

Amendment of the transportation act to facilitate voluntary consolidations of railroads was urged by President Samuel Rea of the Pennsylvania at a conference with President Coolidge at the White House on September 28. Mr. Rea expressed the opinion that the present law is unsatisfactory because it requires that all consolidations, to be approved, must be in harmony with a pre-arranged plan to be prepared by the Interstate Commerce Commission.

The Western Maryland on September 30, cognizant of the fact that a strike vote was being taken by enginemen and firemen, posted notices "to those who wish to apply for the position of engineer or fireman," asking them to apply to A. M. Smith at Hagerstown, or A. Williamson, Cumberland. The notice says that "only men who desire permanent positions need apply." It was reported on October 2 that the voting was going on throughout all divisions of the road. Officers of the company deny the published statement that they have disobeyed an order of the Railroad Labor Board.

Albert Stone, 90 years old, a clerk in the office of the auditor of passenger accounts of the New York Central, New York City, who has heretofore been introduced to the readers of the *Railway Age* as the railroad employee longest in active service, celebrated this week his birthday and at the same time the 75th anniversary of his employment by the New York Central and its predecessor, the New York & Harlem. Among those present were President Crowley and many other officers of the road; and Mr. Stone was presented with an engrossed set of resolutions. This testimonial was signed by chairman Chauncey M. Depew who has been in the service only 59 years. Mr. Stone was offered a pension long ago, but begged the privilege of continuing ot work.

Railway Business Association Annual Meeting

The speakers at the annual dinner of the Railway Business Association to be held at Hotel Commodore, New York, on November 11 are Douglas Malloch, author, William Peter Hamilton, editor of the Wall Street Journal, and James M. Beck, until recently Solicitor General of the United States.

Chicago Terminal Problem

The meeting of representatives of the railroads involved in the proposed straightening of the south branch of the Chicago river in Chicago, which was to have been held met on September 25 to discuss proposals for the re-apportionment of lands which would be made necessary by the straightening, was postponed indefinitely on that date. Postponement was made in order to allow the roads more time in which to study the re-apportionment proposal.

Canada Observes Railway Centenary

The Canadian railways celebrated in Montreal last week the centenary of railroading in the British Empire at a Rotary Club luncheon in the Windsor Hotel. Peter Temple, who was fireman and engineman combined of the first locomotive of the Empire, operating on the Stockton & Darlington, was represented by his grandson, C. H. Temple, superintendent of motive power of the Canadian Pacific, who has served that road for 41 years. Sir Henry Thornton, president of the Canadian National, and Grant Hall, vice-president of the Canadian Pacific, addressed the gathering. Several veterans of both roads were in attendance.

Tunnel Disaster at Richmond

In the caving in of a tunnel of the Chesapeake & Ohio in Richmond, Va., on Friday evening, October 2, an engineman and a fireman were killed and 40 workmen had very narrow escapes. The tunnel extends beneath the west side of Jefferson Park and is one which was abandoned several years ago. The workmen who were the victims were engaged in repair work preparatory to putting the tunnel again in service. A locomotive and several cars, which had just been run into the tunnel, were buried beneath a mass of earth near the western end. This tunnel was part of a line connecting the city with the lower river front and was completed in 1873. It was in regular use until 1902. Large masses of blue marl, softened by heavy rains, are said to have been the cause of the trouble.

Oil-Burner Runs 3,700 Miles With but One Rest

Locomotive No. 2517, of the Great Northern, a new oil-burning engine, Class P-2, on Wednesday morning, September 30, completed a round-trip, Seattle, Wash., to St. Paul, Minn., and return, in less than five days. Thirteen different enginemen, each way, were successively in charge. The length of the route traversed is given by the railroad company in one statement as 3,700 miles (or 1,850 miles each way), and in another as 3,600 (1,800 each way). The Official Guide records Seattle as 1,775 miles from St. Paul.

The eastbound train was a special, consisting of 19 cars, 18 of them loaded with silk; and the westbound was No. 27, the regular fast mail, scheduled to run through in 47 hours, 30 minutes. The eastbound run, 52 hours, 25 minutes, was five hours shorter than the schedule of the Oriental Limited, and on the westbound considerable lost time was made up. With the 19-car train a helper was used for 18 miles ascending the Rocky Mountains.

Eastbound the train left Seattle at 4:30 p. m., Pacific time, on

Friday, September 25, and arrived at St. Paul on Sunday, September 27, at 10:55 p. m., Central time.

Westbound, Train 27 left St. Paul on Monday morning about 20 minutes late (scheduled to leave at 8:45), and arrived at Seattle, Monday morning on time (6:15 a. m., Pacific time).

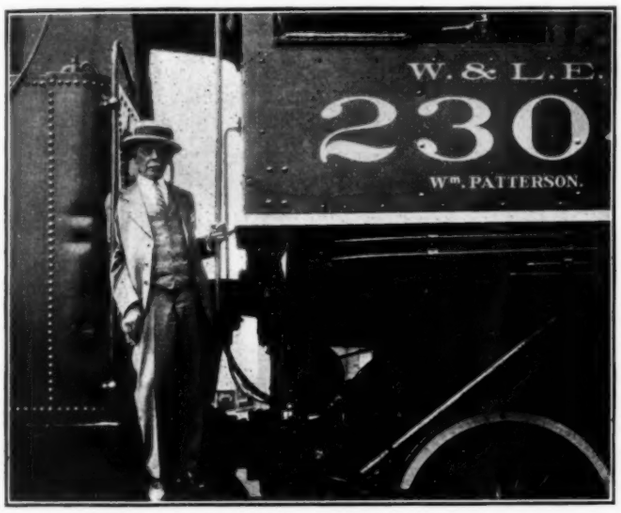
Calculating the distance at 3,600 miles, the average rate of speed, including the nine or ten hours in the roundhouse at St. Paul, was better than 32 miles an hour.

Fifty-five Years of Safety

The young looking man standing on the step of the tender in the accompanying illustration is William Patterson, veteran locomotive engineman of the Wheeling & Lake Erie, who last year retired from train service because of impaired eyesight, and who at that time closed a career of 55 years at the throttle during which his engine never caused the death of any person. He had had one derailment in which a few persons were slightly injured.

Locomotive No. 2304 has just been named "Wm. Patterson" as a mark of honor to the veteran. This was since Mr. Patterson's retirement and done without his knowledge, when the engine was shopped for general repairs. Patterson is still in the service of the company in another position.

Mr. Patterson was born at Kingston, Canada, on June 28, 1846,



William Patterson, Veteran Engineer

and entered railway service as water boy on the Cleveland & Pittsburgh (Pennsylvania System) at the age of 16. He was soon engaged as brakeman and later as fireman and became a runner early in 1870. He continued in the service of the Cleveland & Pittsburgh until 1888, when he resigned and entered the service of the Cleveland, Canton & Southern now a part of the Wheeling & Lake Erie. That road at that time was narrow gage and Patterson's locomotive had 15-inch cylinders and 4-ft. drivers. Patterson ran the first train out of Canton to Cleveland, and it was said that in time he "knew every man, woman and child" between those two cities. Patterson's ambition to serve in the war was thwarted by his youth and his small stature, but he had stirring experiences in Ohio in the days of Morgan's raiders.

Cost of Locomotive Fuel

The average cost per ton of coal used as fuel for road locomotives in freight and passenger train service for Class I roads in July was $2.68, as compared with $2.98 in July last year, and for the seven months of 1925, including July, the average was $2.77 as compared with $3.15 last year, according to the monthly bulletin of fuel costs compiled by the Interstate Commerce Commission. This covers only fuel charged to operating expenses and does not include switching and terminal companies or fuel for switching locomotives. While the cost of coal shows a reduction the average cost of fuel oil per gallon increased, from 2.89 to 3.33 cents for July and from 2.75 to 3.18 cents for the seven months period. The total cost of coal and fuel oil for July was $25,285,608, as compared with $25,785,903 for July, 1924, and the total for seven months was $188,403,445, as compared with $211,374,783 last year.

New Cars and Engines

Class I railroads during the first eight months this year placed in service 105,446 freight cars, according to reports filed by the carriers with the Car Service Division of the American Railway Association. This was an increase of 490 over the number installed in the corresponding period last year but 10,671 less than were installed during the same period in 1923. Of the total, 11,577 were placed in service in August, including 3,519 box cars, 6,730 coal cars and 269 refrigerator cars.

Freight cars on order on September 1 this year totaled 20,863 as compared with 41,476 on the same date last year and 72,906 in 1923.

Class I railroads during the first eight months in 1925 also placed in service 1,213 steam locomotives, as compared with 1,497 during the same period last year and 2,583 during the corresponding period in 1923. The same roads on September 1, 1925, had 193 locomotives on order, compared with 324 on the same day last year and 1,517 two years ago. During the month of August, this year, 147 locomotives were installed in service.

These figures include new, rebuilt and leased equipment.

Private Concern Offers to Complete Hudson Bay Railway

An offer for the purchase of the Hudson Bay Railway from the Canadian government has been made by a Winnipeg syndicate which would complete the road with private capital. Winnipeg grain interests are supporting the move. The syndicate has offered to put up $1,000,000 in evidence of its good faith. The road would be completed within two years of the signing of the contract. So far there has been no expression from the Dominion government officers of their attitude toward the offer. Following are what the syndicate asks from the government:

"1. Water-power rights on the Nelson river to develop electric power to operate trains.

"2. A four-year agreement for trackage rights over the Canadian National from Winnipeg, Portage la Prairie or Brandon, to Hudson Bay Junction.

"3. The right to change the terminus to Fort Churchill if thought advisable.

"The syndicate offers to provide a railway pier at the terminus, at which vessels drawing 35 feet of water would be able to load safely or discharge cargo."

Santa Fe Urges Care on Railroad Property

The Atchison, Topeka & Santa Fe, in its October bulletin, has appealed to the press, the clergy, teachers, civic and business organizations, and the public generally, to impress upon those who use railroad tracks for personal travel or otherwise, the danger of such use and to impress upon automobile drivers the necessity for care in approaching and crossing railroad tracks. The bulletin gives statistics of trespassers killed and injured and other data. A New England railroad having only 230 crossings equipped with gates had 390 gates demolished by automobiles in 1923. On a certain Ohio railroad there were 20 collisions between trains and motor vehicles in this year at crossings protected by bells that, in each case, were ringing. During the year, 27 trains on American railroads were derailed because of automobiles.

The thousands killed and injured on railroad property are contrasted with the tens of thousands killed and injured on highways. According to the estimates made by the Committee on Statistics of the National Conference on Street and Railway Safety 22,600 persons were killed in street highway accidents in 1923, and 678,000 were injured. About 85 per cent of these accidents were due to automobile traffic.

Agreement on Rouyn Mines Railway

Both federal and provincial financial backing is given to the proposed Rouyn Mines Railway to be built a distance of 50 miles south from the main line of the former National Transcontinental, in northern Quebec, to the new goldfields of Quebec. The terms of the four-cornered agreement between the federal and Quebec governments, the syndicate to build the line and the Canadian National, which will operate it, was made public this week at Quebec City. It provides a special subsidy of $250,000 from the Quebec government for the Canadian National as a special aid

(*Continued on page 676*)

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1925

Name of road		Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Operating income (or less).	Net after rents.	Net after rents, 1924.
			Freight.	Passenger.	Total (inc. misc.)	Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.					
Akron, Canton & Youngstown	Aug.	171	$276,237	$661	$291,040	$39,488	$25,815	$10,064	$73,910	$11,914	$160,709	55.2	$130,331	$113,365	$75,085	$76,194
	8 mos.	171	1,966,478	3,922	2,061,024	279,659	200,719	88,490	548,926	95,041	1,206,640	58.5	854,384	743,804	463,108	392,434
Alabama & Vicksburg	Aug.	141	231,302	63,102	317,535	49,909	41,214	9,955	90,778	12,367	206,179	64.9	111,359	76,421	83,631	50,248
	8 mos.	141	1,674,119	452,805	2,304,466	336,187	379,564	80,877	754,674	114,464	1,668,399	72.4	636,067	410,345	462,139	309,458
Vicksburg, Shreveport & Pacific	Aug.	188	344,346	68,763	434,051	68,150	64,330	11,677	153,408	14,814	314,758	72.5	119,293	88,742	62,681	84,632
	8 mos.	188	2,126,226	508,720	2,810,653	468,813	456,515	95,347	1,041,757	124,898	2,203,779	78.4	606,874	409,170	342,329	292,942
Ann Arbor	Aug.	293	458,857	31,482	515,284	73,309	112,895	10,861	190,424	15,639	403,175	78.2	112,209	91,309	82,014	60,896
	8 mos.	293	3,395,538	218,611	3,757,777	385,965	727,583	84,013	1,497,527	127,241	2,822,379	75.1	935,398	779,293	672,465	342,840
Atchison, Topeka & Santa Fe	Aug.	9,186	11,939,616	3,564,144	16,754,594	2,459,744	3,146,481	318,837	4,856,064	359,064	11,080,137	66.1	5,674,457	4,355,788	4,291,257	3,702,543
	8 mos.	9,185	85,127,920	27,069,632	122,202,783	19,007,332	26,277,516	2,701,734	39,483,310	3,073,096	90,307,721	73.9	31,895,062	22,632,729	22,266,383	18,473,578
Gulf, Colorado & Santa Fe	Aug.	1,908	2,025,131	289,319	2,426,311	411,904	434,742	48,256	749,346	59,250	1,700,756	70.1	724,555	630,717	508,818	678,767
	8 mos.	1,908	15,186,016	2,161,293	18,350,069	3,997,184	3,999,720	400,606	5,864,341	532,917	14,782,953	80.6	3,567,116	2,858,853	1,811,271	1,048,099
Panhandle & Santa Fe.	Aug.	858	728,554	125,567	906,080	120,049	159,813	8,672	248,032	16,987	545,426	60.2	360,654	311,169	254,791	431,582
	8 mos.	858	5,215,353	887,639	6,500,316	1,173,967	1,412,837	68,748	1,929,381	153,349	4,725,952	72.7	1,774,364	1,520,809	1,086,494	826,920
Atlanta & West Point	Aug.	93	164,255	77,118	272,622	33,968	44,602	10,352	92,399	11,103	196,998	72.3	75,624	57,371	45,960	17,807
	8 mos.	93	1,212,118	570,115	2,041,133	249,073	354,948	82,984	752,849	84,983	1,565,184	76.7	475,949	352,429	270,811	178,463
Western of Alabama	Aug.	133	196,225	66,966	287,331	32,812	52,725	10,978	79,689	10,132	190,742	66.4	96,589	83,127	80,245	49,680
	8 mos.	133	1,434,808	520,521	2,156,399	282,227	404,365	88,825	641,184	84,621	1,537,145	71.3	619,254	494,230	470,722	370,477
Atlanta, Birmingham & Atlantic	Aug.	639	365,085	59,225	457,474	88,434	102,995	23,523	162,130	15,715	392,852	85.9	64,622	51,526	33,288	28,988
	8 mos.	639	2,868,209	338,829	3,462,385	672,524	778,331	187,772	1,360,064	132,490	3,131,660	90.4	330,725	225,455	18,000	45,812
Atlantic Coast Line	Aug.	4,899	4,213,389	1,675,243	6,386,633	844,491	1,463,121	131,218	2,299,886	143,143	4,931,176	77.2	1,455,457	904,524	936,111	48,738
	8 mos.	4,884	41,941,552	13,714,122	60,222,586	7,116,663	11,436,055	1,117,164	20,245,262	1,229,913	41,521,559	68.9	18,701,027	14,689,248	13,335,359	10,881,647
Charleston & Western Carolina	Aug.	342	248,118	31,752	294,081	53,485	48,843	7,201	114,113	5,886	229,528	78.0	64,553	44,395	41,328	45,153
	8 mos.	342	2,402,076	208,649	2,731,987	463,575	346,630	58,315	1,067,722	52,934	1,989,078	72.8	742,909	582,342	466,323	251,599
Baltimore & Ohio	Aug.	5,292	17,410,095	2,750,479	21,435,866	2,935,882	4,140,314	383,464	7,057,372	498,966	15,198,223	70.9	6,237,643	5,398,256	4,940,913	4,211,437
	8 mos.	5,292	122,675,259	18,431,713	151,247,890	18,074,952	35,344,712	30,191,176	54,645,828	4,135,599	116,569,035	77.1	34,678,855	27,904,619	24,856,468	23,459,568
Baltimore & Ohio Chicago Term	Aug.	80	.....	.....	310,950	24,429	32,831	1,588	155,379	10,802	230,945	74.3	80,005	37,177	132,078	40,930
	8 mos.	80	.....	.....	2,375,539	290,593	282,702	15,024	1,309,681	86,704	2,023,425	85.2	352,114	21,700	772,651	61,970
Staten Island Rapid Transit	Aug.	23	96,073	163,730	308,293	79,704	28,115	2,016	124,181	14,304	248,320	*80.5	59,973	43,842	—6,369	722
	8 mos.	23	776,391	976,033	1,987,775	400,586	246,413	16,657	995,003	116,588	1,775,247	89.3	212,528	86,020	—70,974	—147,231
Bangor & Aroostcok	Aug.	616	295,101	51,945	370,903	105,214	113,260	3,959	119,930	20,868	365,320	98.5	5,583	4,700	51,528	64,996
	8 mos.	616	3,913,662	441,765	4,558,617	853,771	928,877	38,156	1,267,161	181,331	3,282,833	72.0	1,275,784	908,787	1,120,109	1,034,928
Belt Ry. Co. of Chicago	Aug.	32	.....	.....	632,729	83,403	59,276	3,077	246,700	9,523	401,979	63.5	230,750	183,363	131,404	189,131
	8 mos.	32	.....	.....	4,541,087	461,770	474,215	25,491	2,043,745	82,072	3,087,293	68.0	1,453,794	1,106,141	1,026,432	1,138,694
Bessemer & Lake Erie	Aug.	228	1,640,254	26,139	1,688,314	24,429	327,202	18,082	385,990	28,091	790,338	46.8	897,926	773,389	790,368	504,699
	8 mos.	228	10,249,532	150,747	10,585,282	742,562	2,898,556	114,612	2,742,982	249,826	6,730,606	63.6	3,854,676	3,338,935	3,561,161	1,967,910
Bingham & Garfield	Aug.	33	46,219	.....	47,784	10,616	7,397	1,369	11,540	4,562	35,608	74.5	12,176	1,663	14,916	6,808
	8 mos.	33	406,118	356	416,078	75,055	73,375	11,398	106,127	37,665	305,076	73.3	111,002	26,540	125,153	103,974
Boston & Maine	Aug.	2,228	4,342,587	2,011,348	7,154,808	868,325	1,268,793	69,725	2,626,575	223,495	5,082,264	71.0	2,072,544	1,816,538	1,554,987	1,043,365
	8 mos.	2,254	32,625,791	13,200,388	52,169,865	6,789,720	10,625,981	514,722	21,400,921	1,895,926	41,405,327	79.4	10,764,538	8,696,937	6,836,971	5,073,873
Brooklyn Eastern District Term	Aug.	9	113,866	.....	120,604	10,176	12,319	65	42,741	7,345	72,646	60.2	47,958	39,237	40,597	25,190
	8 mos.	9	900,832	.....	954,166	64,889	115,611	2,110	339,525	45,136	567,271	59.5	386,895	326,864	333,273	321,120
Buffalo & Susquehanna R. R. Corp.	Aug.	253	105,044	3,274	112,005	30,137	39,672	1,701	34,383	7,950	113,843	101.6	—1,838	—5,238	4,450	8,292
	8 mos.	253	1,011,844	33,047	1,075,601	252,139	402,832	14,793	340,098	73,802	1,083,664	100.7	—8,063	—35,286	117,222	96,346
Buffalo, Rochester & Pittsburgh	Aug.	601	1,369,326	141,175	1,590,304	234,177	412,724	26,302	542,513	39,626	1,257,900	79.1	332,404	297,355	299,513	284,859
	8 mos.	593	8,855,158	986,025	10,381,401	1,274,090	2,963,461	215,190	4,030,371	327,499	8,829,106	85.0	1,552,295	1,272,010	1,372,729	1,506,386
Canadian Pacific Lines in Maine	Aug.	233	65,094	36,301	114,270	46,986	26,705	5,123	62,586	3,468	144,868	126.8	—30,598	—41,598	—46,990	—47,884
	8 mos.	233	1,221,716	243,116	1,580,768	547,372	353,679	38,317	718,058	31,366	1,688,792	106.8	—108,024	—196,024	—292,226	—176,607
Central of Georgia	Aug.	1,920	1,893,112	549,518	2,615,610	380,232	417,787	78,068	902,135	89,982	1,854,813	70.9	760,797	633,376	583,916	264,457
	8 mos.	1,920	13,647,635	3,850,037	19,196,106	3,109,426	3,456,169	570,798	7,106,605	740,663	14,947,766	77.9	4,248,340	3,384,683	3,048,232	2,737,614
Central of New Jersey	Aug.	690	4,052,519	1,166,748	5,520,638	592,437	979,497	42,391	1,784,792	101,442	3,522,560	63.8	1,998,078	1,577,104	1,444,645	1,526,552
	8 mos.	691	29,521,111	6,589,969	38,554,984	4,160,473	8,209,847	314,782	14,218,922	863,055	27,931,540	72.4	10,623,444	7,585,954	6,551,713	4,933,424
Central Vermont	Aug.	434	566,335	140,000	789,925	134,883	118,049	13,640	318,342	21,004	603,163	76.4	186,762	167,667	142,681	123,437
	8 mos.	434	4,175,498	875,944	5,602,886	1,375,166	972,349	115,798	2,555,960	185,091	5,210,746	93.0	392,140	238,844	98,034	321,856
Chesapeake & Ohio	Aug.	2,627	10,297,553	945,993	11,685,394	1,932,881	2,868,949	104,580	2,947,908	194,450	8,033,803	68.8	3,651,591	3,146,816	3,425,232	2,032,485
	8 mos.	2,606	68,567,048	6,478,414	78,541,245	11,680,665	20,435,824	851,179	22,457,953	1,772,700	57,423,488	73.1	21,117,757	17,384,652	19,069,142	14,908,348
Chicago & Alton	Aug.	1,055	2,013,075	607,378	2,856,037	336,188	638,661	66,225	937,405	53,049	2,029,024	71.0	827,013	727,822	519,950	572,786
	8 mos.	1,055	13,886,602	4,171,819	19,868,462	2,489,663	4,454,050	515,984	7,304,249	447,158	15,221,844	76.6	4,646,618	3,850,342	2,653,589	2,852,309
Chicago & Eastern Illinois	Aug.	945	1,744,036	437,606	2,346,061	257,694	634,873	62,041	796,724	64,723	1,829,742	78.0	516,319	395,370	285,083	194,595
	8 mos.	945	12,485,807	2,986,803	16,796,464	1,698,804	5,105,881	469,934	6,450,903	547,671	14,395,315	85.7	2,401,149	1,534,865	731,697	485,972
Chicago & North Western	Aug.	8,462	10,263,633	2,657,444	14,383,063	2,104,254	2,558,300	201,699	4,771,206	318,414	10,038,548	69.8	4,344,515	3,542,850	3,339,361	1,790,061
	8 mos.	8,462	66,203,655	17,993,587	94,851,078	12,738,768	19,957,078	1,402,556	37,472,000	2,751,292	74,859,669	78.9	19,991,409	13,566,946	12,521,897	9,005,205
Chicago, Burlington & Quincy	Aug.	9,399	11,081,126	2,589,395	15,063,899	1,927,657	2,554,150	271,697	4,646,435	365,029	9,905,421	65.8	5,158,478	4,049,927	3,670,352	3,753,506
	8 mos.	9,397	74,275,070	16,582,550	100,954,369	12,523,771	22,207,291	2,029,696	35,919,953	2,920,797	76,235,816	75.5	24,718,553	17,870,842	15,816,773	16,667,984
Chicago Great Western	Aug.	1,496	1,759,352	371,732	2,290,774	327,149	396,648	77,807	820,942	53,164	1,690,118	73.8	600,656	517,339	363,097	298,217
	8 mos.	1,496	11,822,193	2,357,574	15,476,024	2,325,174	3,291,512	564,131	6,365,675	437,101	13,084,792	84.5	2,391,232	1,745,566	769,514	1,025,128
Chicago, Indianapolis & Louisville	Aug.	649	1,174,681	257,731	1,574,477	184,461	310,152	35,261	519,763	31,641	1,095,487	69.6	478,990	397,759	305,525	260,653
	8 mos.	649	8,393,346	1,889,129	11,392,018	1,184,441	2,384,794	277,141	4,072,357	268,541	8,303,976	72.9	3,088,042	2,509,736	1,607,576	1,363,289

*Excluding construction expenses 63.13%.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or less).	Net after rents.	Net after rents, 1924.
Chicago, Milwaukee & St. Paul	Aug.	11,205	$11,697,955	$2,045,731	$15,208,771	$2,067,828	$3,263,031	$266,637	$5,246,251	335,330	$11,256,832	74.0	$3,951,939	$3,251,425	$2,633,727	$1,449,520
	8 mos.	11,204	78,457,592	13,323,762	102,268,013	15,301,258	26,268,503	1,699,918	39,970,708	2,747,972	86,461,644	84.5	15,806,369	9,717,734	6,203,438	7,299,276
Chicago, Peoria & St. Louis	Aug.	215	83,815	7,902	98,075	15,214	15,104	1,001	40,248	7,309	78,876	80.4	19,199	16,449	3,308	—9,905
	8 mos.	227	587,303	68,136	711,555	124,273	125,660	10,622	347,547	64,819	672,921	94.6	38,634	14,576	—118,685	—181,059
Chicago River & Indiana	Aug.	19	.....	.....	563,623	79,229	77,310	760	216,029	13,077	386,405	68.6	177,218	134,798	243,433	266,167
	8 mos.	19	.....	.....	4,483,368	611,971	685,742	6,524	1,768,718	102,307	3,175,262	70.8	1,308,106	989,760	1,849,824	2,048,282
Chicago, Rock Island & Pacific	Aug.	7,578	8,132,577	2,178,551	11,076,479	1,374,891	2,294,712	231,384	3,920,020	284,634	8,155,783	73.6	2,920,696	2,335,298	1,954,223	2,248,089
	8 mos.	7,578	58,755,673	15,533,009	80,277,257	9,568,391	18,662,909	1,782,261	31,465,833	2,352,061	64,204,414	80.0	16,072,843	11,726,927	8,318,525	7,205,646
Chicago, Rock Island & Gulf	Aug.	461	378,354	67,478	488,314	53,458	77,567	17,910	176,568	15,743	343,413	70.3	144,901	112,125	94,918	106,012
	8 mos.	461	3,088,828	599,339	4,043,280	514,616	559,852	137,818	1,647,325	129,871	3,021,270	74.7	1,022,010	858,920	659,611	645,512
Chic., St. Paul, Minn. & Omaha	Aug.	1,749	1,910,430	550,979	2,650,133	402,883	429,536	35,526	996,497	79,330	1,961,541	74.0	688,592	548,093	514,565	292,121
	8 mos.	1,749	12,361,728	3,610,258	17,278,468	2,286,329	3,345,965	242,094	7,497,049	604,696	14,056,039	81.4	3,222,429	2,220,393	1,788,277	1,514,299
Cincinnati, Indianapolis & Western	Aug.	347	375,341	37,976	437,492	69,026	87,414	16,107	168,352	16,798	358,830	82.0	78,662	59,704	28,384	21,722
	8 mos.	347	2,674,133	244,673	3,139,903	410,277	635,205	126,893	1,292,470	141,369	2,614,110	83.2	525,793	379,198	150,184	119,847
Clinchfield R. R.	Aug.	309	658,500	33,208	706,153	95,897	176,439	22,280	135,270	25,442	454,086	64.3	252,067	196,980	304,599	261,862
	8 mos.	309	5,373,834	247,726	5,738,317	679,514	1,456,674	192,678	1,172,865	165,431	3,655,354	63.7	2,082,963	1,642,668	2,131,683	1,661,831
Colorado & Southern	Aug.	1,056	748,010	212,383	1,053,082	152,006	200,944	14,672	426,058	42,597	841,142	79.9	211,940	146,951	137,458	176,301
	8 mos.	1,056	5,849,975	1,100,265	7,622,527	1,131,609	1,808,250	116,469	2,963,774	328,908	6,403,218	84.0	1,219,309	706,891	632,611	782,527
Ft. Worth & Denver City	Aug.	491	638,152	214,007	908,704	78,301	169,883	14,423	262,298	35,263	568,539	62.6	340,165	296,639	264,705	338,757
	8 mos.	468	5,062,743	1,356,279	6,887,906	682,656	1,454,989	123,840	2,113,177	283,108	4,707,877	68.3	2,180,029	1,738,439	1,701,064	1,845,774
Wichita Valley	Aug.	271	88,292	20,810	116,724	13,744	7,120	48	35,302	1,999	56,189	48.1	60,535	53,463	34,121	44,389
	8 mos.	271	759,267	164,402	987,849	167,017	69,899	289	326,037	14,261	567,673	57.5	420,176	343,296	193,958	295,224
Columbus & Greenville	Aug.	167	113,011	30,286	151,004	44,128	18,352	2,661	52,290	9,714	126,892	84.0	24,112	21,381	9,678	—1,805
	8 mos.	167	776,259	188,994	1,022,126	364,832	132,058	21,448	372,711	79,417	968,126	94.7	54,000	38,709	—51,498	28,088
Delaware & Hudson	Aug.	881	3,674,132	512,038	4,545,863	365,601	960,330	54,647	1,379,817	136,934	2,942,796	64.7	1,603,067	1,490,765	1,512,296	904,024
	8 mos.	885	26,355,361	2,469,338	31,044,711	3,373,230	7,823,120	400,476	10,878,575	1,129,676	23,856,733	76.8	7,187,978	6,287,297	6,464,423	4,506,503
Delaware, Lackawanna & Western	Aug.	992	5,481,887	1,335,169	7,660,047	847,206	1,379,019	126,502	2,742,439	165,288	5,313,010	69.4	2,347,037	1,696,460	1,732,802	1,280,853
	8 mos.	992	43,341,276	9,013,810	59,010,666	5,777,404	12,275,870	989,227	22,295,825	1,316,016	43,056,734	73.0	15,953,932	11,115,349	11,387,934	9,948,829
Denver & Rio Grande Western	Aug.	2,577	2,179,520	586,063	3,046,122	526,596	442,216	56,254	1,061,344	83,305	2,252,386	73.9	793,736	615,695	636,554	39,278
	8 mos.	2,572	15,156,157	3,381,908	20,281,044	3,644,831	3,733,784	423,052	6,697,897	695,439	15,603,810	76.9	4,677,234	3,310,531	3,639,131	1,645,210
Denver & Salt Lake	Aug.	255	351,181	37,476	438,722	105,417	82,653	2,379	98,598	6,368	295,415	67.3	143,307	134,307	128,548	22,128
	8 mos.	255	1,633,239	209,367	2,043,508	549,369	670,178	13,320	545,639	50,269	1,828,775	89.5	214,733	142,547	169,616	—116,598
Detroit & Mackinac	Aug.	375	118,849	25,323	159,803	37,809	37,360	2,186	55,877	5,323	137,286	85.9	22,517	12,355	25,125	34,855
	8 mos.	375	841,956	178,924	1,132,061	248,841	301,080	16,642	432,728	45,221	1,042,200	92.1	89,861	9,062	108,208	176,088
Detroit & Toledo Shore Line	Aug.	61	363,583	.....	365,893	43,703	32,340	2,860	86,292	9,627	174,822	47.7	191,071	170,436	94,597	45,015
	8 mos.	61	2,488,568	.....	2,523,828	318,041	276,107	23,173	682,263	65,126	1,364,710	54.0	1,159,118	985,830	393,284	112,647
Detroit Terminal	Aug.	26	.....	.....	212,469	18,851	16,129	.....	99,019	3,210	137,209	64.6	75,260	55,218	74,494	70,923
	8 mos.	26	.....	.....	1,640,296	166,251	122,277	84	781,413	18,178	1,088,203	66.3	552,093	393,052	514,720	377,428
Detroit, Toledo & Ironton	Aug.	470	945,821	8,296	961,953	168,746	175,577	8,444	282,424	31,866	667,023	69.3	294,930	279,881	182,012	202,618
	8 mos.	470	8,507,144	56,210	8,672,013	1,393,173	1,423,843	67,508	2,330,436	223,058	5,420,688	62.5	3,251,325	2,870,287	2,071,418	1,816,193
Duluth & Iron Range	Aug.	276	817,029	7,106	950,482	106,020	111,417	1,326	205,071	18,000	442,201	46.5	508,281	445,725	452,227	331,278
	8 mos.	276	4,168,909	53,643	4,740,469	790,094	939,282	9,520	1,322,161	155,848	3,219,598	67.9	1,520,871	1,202,397	1,228,910	564,447
Duluth, Missabe & Northern	Aug.	307	2,289,162	7,913	2,602,159	198,510	189,500	3,809	366,776	26,091	785,334	30.2	1,816,825	1,593,029	1,589,690	1,364,873
	8 mos.	306	11,059,772	59,991	12,442,032	1,431,115	1,567,932	26,113	2,199,341	196,831	5,366,716	43.1	7,075,316	5,964,954	5,907,638	3,285,856
Duluth, Winnipeg & Pacific	Aug.	178	141,843	21,466	174,850	32,663	31,683	4,445	64,428	6,892	143,016	52.0	31,834	23,017	26,959	11,861
	8 mos.	178	1,324,318	111,739	1,489,036	271,931	287,237	35,300	578,481	59,560	1,242,341	83.4	246,695	172,784	204,935	149,638
Elgin, Joliet & Eastern	Aug.	459	1,797,173	1	1,952,350	216,484	520,694	13,717	633,713	42,873	1,427,281	73.1	525,069	404,365	237,288	159,436
	8 mos.	459	15,336,299	128	16,802,553	1,481,530	4,022,885	102,713	5,750,153	356,474	11,711,539	69.7	5,091,014	4,321,697	2,731,121	1,882,098
Erie R. R.	Aug.	2,055	8,107,622	1,394,915	10,268,320	1,211,647	2,363,693	144,910	3,507,680	284,567	7,557,369	73.6	2,710,951	2,342,806	2,310,172	1,304,266
	8 mos.	2,055	55,660,728	8,943,100	70,274,806	8,421,209	17,799,722	1,192,828	27,264,160	2,331,923	57,322,785	81.6	12,952,021	10,036,234	10,449,161	9,163,930
Chicago & Erie	Aug.	269	1,044,819	88,305	1,229,450	186,125	151,921	22,259	359,899	37,706	749,951	61.0	479,499	422,900	113,023	62,402
	8 mos.	269	8,007,052	500,420	9,225,496	1,044,666	1,151,367	186,763	2,962,275	312,325	5,650,309	61.2	3,575,187	3,130,685	859,596	545,557
New Jersey & New York	Aug.	45	30,875	117,439	153,701	18,641	23,387	1,609	66,949	3,875	114,461	74.5	39,240	35,535	2,100	—4,279
	8 mos.	45	206,705	851,200	1,097,163	143,303	185,052	11,761	572,458	33,065	945,637	86.2	151,526	122,105	—130,662	—68,868
N. Y. Susquehanna & Western	Aug.	135	436,057	61,709	542,858	59,811	75,567	4,420	232,229	11,422	383,447	70.6	159,411	130,511	109,352	—434
	8 mos.	135	2,721,837	464,630	3,537,573	394,071	486,783	33,620	1,675,529	91,662	2,681,457	75.8	856,116	624,830	491,173	—135,127
Evansville, Indian. & Terre Haute	Aug.	146	207,828	5,838	221,180	38,813	27,977	1,868	67,827	4,078	140,563	63.6	80,617	75,534	36,035	—13,428
	8 mos.	146	1,470,073	34,225	1,558,811	240,651	265,282	14,733	517,843	32,806	1,071,081	68.7	487,730	436,810	234,184	29,923
Florida East Coast	Aug.	770	1,167,561	847,649	2,205,083	350,340	345,255	18,871	846,826	40,450	1,568,179	71.1	636,904	527,928	362,608	57,399
	8 mos.	770	10,370,260	5,931,444	18,310,055	2,634,506	2,357,442	160,644	6,651,173	317,298	12,260,156	67.0	6,049,899	5,126,308	3,771,110	2,998,058
Fort Smith & Western	Aug.	249	118,180	18,823	144,668	23,982	25,717	5,281	45,253	7,027	107,815	74.5	36,853	30,584	18,300	39,147
	8 mos.	249	927,259	132,462	1,127,185	194,054	205,850	41,964	363,223	60,377	867,382	77.0	259,803	214,791	104,899	8,585
Galveston Wharf Co.	Aug.	13	.....	.....	78,950	45,952	3,884	1,095	24,878	2,633	82,532	104.5	—3,582	—25,082	—25,059	44,452
	8 mos.	13	.....	.....	1,031,298	408,606	33,044	7,596	270,504	21,459	794,099	77.0	237,199	90,121	89,012	1,593
Georgia R. R.	Aug.	328	336,767	106,353	474,886	50,863	99,800	22,351	199,986	20,442	386,929	81.5	87,957	80,894	85,580	60,731
	8 mos.	328	2,937,276	713,969	3,931,593	441,219	772,082	183,614	1,637,034	162,320	3,188,456	81.1	743,137	679,953	666,961	487,882
Georgia & Florida	Aug.	406	161,916	22,177	190,665	21,803	19,408	8,881	58,019	7,970	116,299	61.0	74,366	67,842	49,851	39,194
	8 mos.	406	936,825	134,087	1,127,157	153,619	133,414	62,216	423,043	59,895	833,946	74.0	293,211	240,648	112,820	134,907

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or less).	Net after rents.	Net after rents, 1924.
Grand Trunk Western	Aug.	347	$1,320,860	$268,768	$1,676,298	$204,585	$367,896	$38,636	$521,663	$51,421	$1,195,595	71.3	$480,703	$418,447	$297,786	$39,039
	8 mos.	347	9,879,788	1,459,242	12,020,222	1,465,990	2,958,866	298,055	4,334,409	428,426	9,556,273	79.5	2,463,949	1,929,276	817,856	—127,297
Atlantic & St. Lawrence	Aug.	166	166,169	39,826	224,264	56,182	37,702	5,997	93,978	7,397	202,112	90.1	22,152	2,647	—46,157	—109,006
	8 mos.	166	1,315,375	254,943	1,704,495	389,613	276,592	47,157	870,686	65,915	1,662,276	97.5	42,219	—93,733	—576,716	—890,698
Chic., Det. & Canada Gr. Tr. Jct.	Aug.	59	187,350	3,975	227,005	44,234	8,678	4,054	91,297	3,513	151,765	66.9	75,240	67,179	33,326	33,743
	8 mos.	59	1,663,540	35,784	2,017,958	238,342	92,847	32,769	649,081	27,588	1,040,534	51.6	977,424	894,032	664,316	587,961
Det., Grand Haven & Milwaukee	Aug.	189	525,858	44,551	645,161	88,182	38,577	11,259	255,094	16,058	410,026	63.6	235,135	231,146	113,219	23,345
	8 mos.	189	3,818,444	262,391	4,486,957	548,591	386,375	88,972	1,914,440	136,416	3,075,018	68.5	1,411,939	1,375,619	609,007	215,285
Great Northern	Aug.	8,231	8,217,235	1,469,385	10,787,000	1,402,540	1,798,018	197,087	3,376,953	230,477	7,072,618	65.6	3,714,382	2,829,400	2,636,365	1,603,212
	8 mos.	8,249	51,585,838	9,162,641	67,717,453	10,092,496	11,440,714	1,514,868	23,900,274	1,822,112	49,390,593	72.9	18,326,860	12,040,176	12,075,964	9,325,192
Green Bay & Western	Aug.	234	127,176	5,558	138,166	28,426	17,068	4,105	44,508	3,025	97,020	70.2	41,146	33,646	25,346	16,103
	8 mos.	234	870,646	65,074	990,151	198,547	129,235	32,993	357,579	22,031	740,210	74.7	249,941	189,147	138,147	117,174
Gulf & Ship Island	Aug.	307	224,449	42,835	283,292	54,045	51,015	5,397	90,086	12,539	215,148	75.9	68,144	44,572	26,549	68,249
	8 mos.	307	1,821,859	316,511	2,352,021	395,999	356,876	58,341	692,029	118,193	1,699,255	72.2	652,766	417,316	315,249	408,709
Gulf, Mobile & Northern	Aug.	466	480,855	34,159	534,418	77,231	74,781	24,869	139,650	20,421	337,438	63.14	196,980	144,077	138,899	106,426
	8 mos.	466	3,634,266	258,814	4,056,481	608,718	684,849	180,302	1,188,263	194,185	2,859,859	70.51	1,196,622	910,273	831,974	778,032
Hocking Valley	Aug.	348	1,551,560	75,847	1,830,020	358,705	518,815	15,547	521,910	39,948	1,453,009	79.4	377,011	278,946	166,684	294,686
	8 mos.	348	10,850,934	524,399	12,478,030	1,496,716	3,580,965	115,570	3,683,483	320,023	9,188,142	73.6	3,289,888	2,489,495	2,207,741	2,474,035
Illinois Central	Aug.	4,875	10,270,797	2,216,712	13,357,827	2,167,048	2,933,202	221,146	4,383,368	318,305	9,977,610	74.7	3,380,217	2,345,354	2,417,727	2,153,239
	8 mos.	4,875	74,283,367	16,238,986	98,282,605	14,263,970	22,185,739	1,717,652	35,189,840	2,570,980	76,136,964	77.5	22,145,641	14,916,492	15,353,016	15,989,706
Yazoo & Mississippi Valley	Aug.	1,380	1,619,567	293,390	2,008,862	313,617	386,757	30,097	714,328	47,381	1,490,594	74.2	518,268	389,210	342,671	305,871
	8 mos.	1,380	12,089,122	2,110,586	15,015,125	2,277,459	2,643,126	232,909	5,482,285	381,818	10,985,766	73.2	4,029,359	2,999,684	2,675,356	2,154,417
Illinois Central Combined Report	Aug.	6,255	11,890,364	2,510,102	15,366,689	2,480,665	3,319,959	251,243	5,097,696	365,686	11,468,204	74.6	3,898,485	2,734,564	2,760,398	2,459,110
	8 mos.	6,255	86,372,489	18,349,572	113,297,730	16,541,429	24,828,865	1,950,561	40,672,125	2,952,798	87,122,730	76.9	26,175,000	17,916,176	18,028,372	18,144,123
Kansas City, Mexico & Orient	Aug.	272	172,164	8,838	188,286	40,070	55,209	5,191	59,974	6,901	167,345	88.9	20,941	16,943	8,966	44,742
	8 mos.	272	1,636,529	62,168	1,759,138	320,175	426,435	44,113	604,139	161,269	1,556,129	88.5	203,009	142,077	—10,393	—46,493
Kans. City, Mex. & Orient of Tex.	Aug.	465	250,254	15,709	275,405	77,673	69,999	5,624	82,228	7,012	242,536	88.1	32,869	25,871	4,035	58,066
	8 mos.	465	2,004,770	107,981	2,184,294	430,659	469,212	48,818	708,869	50,024	1,707,241	78.2	477,053	420,653	249,426	50,122
Kansas City Southern	Aug.	784	1,278,814	147,187	1,589,479	227,747	241,129	46,530	487,780	74,607	1,077,028	67.8	512,451	418,267	395,286	258,508
	8 mos.	784	9,602,580	1,060,580	11,807,000	1,617,008	2,139,736	358,121	3,832,797	601,433	8,538,014	72.3	3,268,986	2,511,279	2,291,291	1,858,356
Texarkana & Ft. Smith	Aug.	81	222,722	11,875	247,092	36,214	29,888	6,298	69,214	11,021	153,454	62.1	93,638	77,719	41,502	81,332
	8 mos.	81	1,750,033	90,153	1,981,461	241,270	189,627	47,272	569,258	78,982	1,138,755	57.5	842,706	715,577	497,647	612,810
Kansas, Oklahoma & Gulf	Aug.	314	199,508	9,066	214,786	68,159	38,664	8,866	81,592	8,007	204,821	95.4	9,965	1,037	—16,886	24,515
	8 mos.	314	1,355,276	60,228	1,457,347	439,330	263,602	67,613	580,268	78,189	1,428,319	98.0	29,028	—36,918	—118,977	—32,531
Lake Superior & Ishpeming	Aug.	161	245,287	2,088	285,819	45,710	19,907	521	59,187	4,350	129,663	45.4	156,156	126,439	123,950	62,285
	8 mos	161	1,178,837	28,423	1,369,002	283,816	199,300	3,828	368.302	40,114	895,254	65.4	473,748	351,642	324,680	164,503
Lake Terminal R. R.	Aug.	13	.....	.....	120,696	15,552	18,679	.....	58,052	1,669	93,952	77.8	26,744	21,461	24,115	696
	8 mos.	13	.....	.....	790,816	120,054	144,226	.....	451,437	13,819	729,536	92.2	61,280	13,298	30,784	—91,003
Lehigh & Hudson River	Aug.	96	299,650	3,418	313,374	37,449	43,956	2,088	104,982	8,594	197,069	62.9	116,305	99,173	70,473	41,898
	8 mos.	96	2,038,919	22,679	2,158,478	253,839	359,948	16,641	793,928	76,271	1,500,622	69.5	657,856	544,418	342,566	316,410
Lehigh & New England	Aug.	219	645,400	1,226	654,219	119,185	116,208	5,357	187,759	16,394	444,513	67.9	209,706	182,794	169,017	136,903
	8 mos.	219	3,852,943	12,238	3,929,719	518,975	883,663	43,804	1,179,819	147,833	2,771,076	70.5	1,158,643	995,558	1,004,564	720,109
Lehigh Valley	Aug.	1,363	6,023,933	896,324	7,370,394	878,561	1,453,293	128,083	2,454,721	140,636	5,091,760	69.1	2,278,634	1,827,101	1,810,630	1,215,587
	8 mos.	1,373	43,592,173	5,321,531	52,814,482	5,838,275	10,703,195	983,423	19,976,635	1,191,372	38,921,760	73.7	13,892,722	10,935,368	10,267,008	7,600,817
Louisiana & Arkansas	Aug.	302	344,537	20,599	378,705	37,677	33,672	11,226	89,311	14,637	186,209	49.2	192,496	157,051	151,283	71,584
	8 mos.	302	2,423,343	176,200	2,672,873	374,938	487,956	84,164	728,875	107,508	1,778,846	66.6	894,027	667,906	576,723	392,441
Louisiana Ry. & Nav. Co.	Aug.	337	286,556	20,915	320,780	67,537	50,903	12,871	123,092	10,566	263,973	82.2	56,807	36,684	5,957	21,625
	8 mos.	337	2,144,125	146,490	2,437,514	525.667	363,323	85,658	1,005,579	81,740	2,060,402	84.5	377,112	215,402	—19,602	—87,577
Louisiana Ry. & Nav. Co. of Texas	Aug.	206	83,182	10,030	98,952	23,265	12,664	1,728	53,203	5,697	96,557	97.6	2,395	—1,610	—23,834	26,280
	8 mos.	206	698,901	65,509	813,487	160,410	126,972	23,444	389,177	44,465	744,468	91.5	69,019	37,079	—100,005	—80,332
Louisville & Nashville	Aug.	5,044	9,709,026	2,155,951	12,556,936	1,760,807	2,697,887	221,150	3,996,503	289,782	9,018,887	71.8	3,538,047	2,839,959	2,933,042	2,140,418
	8 mos.	5,044	71,094,285	14,972,685	91,572,503	13,434,238	21,176,061	1,910,485	31,998,501	2,254,930	71,114,518	77.7	20,457,985	16,235,870	16,345,051	12,331,166
Louisville, Henderson & St. Louis	Aug.	199	244,114	63,486	327,106	75,179	46,376	7,353	96,223	9,870	235,001	71.8	92,105	69,820	59,136	30,145
	8 mos.	199	1,868,570	438,156	2,454,641	476,282	328,792	57,824	776,427	77,403	1,716,728	69.9	737,913	589,281	496,212	277,469
Maine Central	Aug.	1,207	1,107,527	423,770	1,708,096	279,770	305,921	16,071	656,342	46,951	1,311,026	76.8	397,070	296,561	288,325	193,866
	8 mos.	1,207	9,418,406	2,701,334	13,378,304	2,132,641	2,560,866	111,789	5,304,457	393,803	10,515,993	78.6	2,862,311	2,058,782	1,993,593	1,561,690
Midland Valley	Aug.	364	318,091	37,812	371,887	71,489	43,742	7,155	99,477	17,846	237,760	63.9	134,127	117,357	100,797	97,363
	8 mos.	364	2,474,954	324,429	2,915,617	492,021	373,481	50,221	838,508	150,418	1,892,896	64.9	1,022,721	887,600	742,967	696,413
Minneapolis & St. Louis	Aug.	1,638	1,279,947	108,708	1,454,280	241,051	255,400	32,338	540,620	45,880	1,115,249	76.7	339,031	280,975	190,691	—171,999
	8 mos.	1,638	8,139,848	832,194	9,494,471	1,864,611	2,169,326	250,931	4,331,226	379,082	8,987,651	94.7	506,820	—5,913	—459,204	—1,426,228
Minneapolis, St. P. & S. S. Marie	Aug.	4,400	3,322,345	728,064	4,460,047	588,679	730,043	71,828	1,575,345	109,172	3,109,271	69.7	1,350,776	1,080,861	997,880	371,915
	8 mos.	4,402	23,343,579	4,273,989	30,138,227	4,375,904	5,663,518	555,861	11,868,454	894,831	23,521,726	78.0	6,616,501	4,632,751	3,895,195	2,073,520
Duluth, South Shore & Atlantic	Aug.	590	377,874	88,822	524,701	105,049	78,468	6,808	184,987	10,430	391,604	74.6	133,097	105,097	87,455	53,958
	8 mos.	590	2,908,534	652,841	3,912,031	709,327	666,956	55,508	1,573,395	91,421	3,139,275	80.2	772,756	542,747	383,153	326,076
Spokane International	Aug.	165	120,072	15,793	142,716	24,950	10,068	3,330	36,029	6,922	81,918	57.4	60,798	55,595	44,989	248
	8 mos.	165	660,317	101,524	809,694	122,145	67,987	25,798	268,196	52,297	544,065	67.2	265,629	223,940	166,099	100,650
Mississippi Central	Aug.	164	139,622	14,992	159,225	22,453	28,658	6,841	36,857	7,662	102,470	64.4	56,755	40,188	50,629	54,783
	8 mos.	175	923,586	95,314	1,057,355	142,729	184,519	56,182	287,028	68,225	738,479	69.8	318,876	225,693	270,510	314,760

REVENUES AND EXPENSES OF RAILWAYS

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or less).	Net after rents.	Net after rents, 1924.
Missouri & North Arkansas	Aug. 364	$103,409	$21,946	$135,197	$28,950	$25,760	$5,460	$51,786	$6,882	$118,838	87.9	$16,359	$13,989	$3,753	$11,587
	8 mos. 364	785,562	132,277	987,594	222,647	176,527	42,551	394,924	56,405	892,165	90.3	95,429	78,748	5,795	—12,284
Missouri-Kansas-Texas	Aug. 1,799	2,593,612	424,635	3,201,511	342,372	642,516	55,441	732,395	84,893	1,868,847	58.4	1,332,664	1,154,002	1,153,267	673,694
	8 mos. 1,799	17,869,027	3,222,320	22,722,724	2,269,891	4,826,220	427,573	5,962,945	730,482	14,291,118	62.9	8,431,606	7,020,772	7,042,559	5,357,794
Mo., Kansas Texas of Texas	Aug. 1,389	1,225,136	354,891	1,706,105	388,867	448,953	41,940	654,121	64,508	1,589,635	93.2	116,470	64,803	—110,177	349,543
	8 mos. 1,389	9,871,945	2,867,559	13,881,810	2,359,838	2,472,735	342,716	5,522,104	535,317	11,234,222	80.9	2,647,588	2,175,554	619,203	1,259,997
Missouri Pacific	Aug. 7,337	8,862,003	1,547,961	11,218,257	1,788,536	2,153,445	283,082	3,971,055	351,682	8,623,964	76.9	2,594,293	2,167,328	1,733,184	1,453,603
	8 mos. 7,337	67,134,503	10,963,832	84,546,073	12,799,993	17,119,993	2,080,760	32,142,185	2,652,548	67,247,834	79.5	17,298,239	14,040,333	10,450,479	9,014,179
Gulf Coast Lines	Aug. 922	1,112,883	167,503	1,352,213	200,755	199,082	42,847	341,445	53,206	835,564	61.7	516,649	451,824	428,534	441,046
	8 mos. 922	8,120,616	1,318,836	10,045,813	1,544,632	1,412,044	275,142	2,798,787	383,398	6,365,082	63.3	3,680,731	3,186,479	2,895,285	3,010,625
International-Great Northern	Aug. 1,159	1,084,369	199,473	1,403,896	259,335	219,020	32,899	524,091	60,197	1,072,253	76.38	331,643	294,466	249,309	284,345
	8 mos. 1,159	8,316,002	1,454,118	10,791,365	2,155,122	1,892,578	281,496	4,275,189	459,417	8,889,723	82.38	1,901,642	1,611,173	1,092,860	998,310
Texas & Pacific	Aug. 1,952	2,146,212	548,431	2,895,713	449,231	593,139	63,092	981,081	87,540	2,175,415	75.1	720,298	568,299	511,344	613,608
	8 mos. 1,952	15,702,485	4,207,795	21,546,085	3,315,731	4,487,686	502,204	7,974,810	740,859	17,015,503	79.0	4,530,582	3,347,024	2,826,643	2,512,086
Mobile & Ohio	Aug. 1,161	1,381,159	159,967	1,618,099	223,565	247,355	48,051	533,689	44,466	1,095,783	67.7	522,316	426,719	388,775	299,246
	8 mos. 1,161	10,542,728	1,064,812	12,293,878	1,779,912	2,160,627	395,358	4,319,081	361,317	9,015,177	73.3	3,278,701	2,563,499	2,206,851	2,446,291
Monongahela	Aug. 129	515,036	22,081	540,548	52,000	55,000	941	122,323	9,089	238,878	44.2	301,670	270,539	207,989	108,251
	8 mos. 131	3,402,414	192,000	3,627,502	489,500	500,000	9,241	944,601	77,638	2,018,474	55.6	1,609,028	1,447,546	977,971	480,591
Monongahela Connecting	Aug. 7	.....	.....	158,521	21,489	35,774	374	71,646	3,127	132,400	83.5	26,121	22,096	20,172	5,543
	8 mos. 7	.....	.....	1,441,562	165,675	319,777	3,018	711,295	26,854	1,226,619	85.1	214,943	178,301	169,752	—5,276
Montour	Aug. 57	63,379	252	64,481	23,523	24,820	835	13,336	7,018	69,532	107.8	—5,051	—8,820	18,797	59,284
	8 mos. 57	664,569	4,607	677,398	160,681	305,392	7,606	176,962	57,077	706,818	104.3	—29,420	—64,103	182,030	312,613
Nashville, Chattanooga & St. Louis	Aug. 1,259	1,368,432	442,745	1,969,695	298,507	420,638	76,406	674,079	73,274	1,548,730	78.7	420,365	345,242	354,555	325,196
	8 mos. 1,259	11,180,578	3,144,655	15,520,328	2,422,999	3,448,814	619,913	5,603,936	565,588	12,720,400	82.0	2,799,928	2,303,547	2,191,768	1,993,995
Nevada Northern	Aug. 165	76,184	8,278	90,978	17,993	6,194	879	15,482	5,969	46,680	51.3	44,298	31,063	30,696	44,371
	8 mos. 165	568,947	72,813	692,630	143,517	57,387	7,661	132,850	45,331	387,643	55.9	304,987	218,398	221,653	301,108
Newburgh & South Shore	Aug. 7	.....	.....	159,784	26,262	34,744	.....	62,728	3,772	127,506	79.8	32,278	19,501	25,143	40,564
	8 mos. 7	.....	.....	1,342,686	172,793	300,014	.....	528,285	35,875	1,036,967	77.2	305,719	199,894	239,459	63,658
New Orleans Great Northern	Aug. 274	202,471	35,701	245,959	32,118	44,237	5,760	70,369	11,289	163,787	66.6	82,172	67,153	58,545	48,215
	8 mos. 274	1,614,261	219,729	1,903,333	289,852	325,806	50,926	587,759	84,616	1,339,083	70.4	564,250	408,301	331,056	350,222
New York Central	Aug. 6,922	20,985,710	9,499,601	34,498,465	5,370,094	6,818,949	421,266	10,877,470	850,835	24,787,050	71.9	9,711,415	7,410,186	7,269,261	5,569,658
	8 mos. 6,922	153,955,490	64,510,054	249,833,821	32,783,342	52,319,171	3,028,285	87,789,848	7,145,234	186,303,356	74.6	63,530,465	46,227,516	44,214,019	41,579,765
Cincinnati Northern	Aug. 244	418,260	11,669	446,600	49,574	63,448	6,203	127,778	9,443	256,425	58.2	184,175	155,653	107,617	104,744
	8 mos. 244	2,853,886	71,120	2,993,865	360,850	508,000	49,060	957,843	77,586	1,951,599	65.2	1,042,266	849,834	592,912	469,466
Cleve., Cin., Chic. & St. Louis	Aug. 2,398	6,124,564	1,572,920	8,324,532	1,078,525	1,463,287	144,427	2,689,056	303,411	5,747,136	69.0	2,577,396	2,058,883	1,968,088	1,153,913
	8 mos. 2,398	43,750,399	10,746,334	59,395,030	7,141,039	11,893,703	1,021,933	21,272,960	1,724,133	43,552,682	73.3	15,842,348	12,245,310	11,246,415	7,985,657
Indiana Harbor Belt	Aug. 116	.....	.....	932,932	131,599	90,216	3,956	338,451	23,051	586,905	62.9	346,027	294,746	211,159	50,394
	8 mos. 116	.....	.....	7,156,929	847,903	943,766	38,239	2,937,653	182,488	4,948,246	69.1	2,208,683	1,892,567	1,145,581	498,127
Michigan Central	Aug. 1,862	5,320,826	2,184,327	8,227,350	1,113,543	1,288,205	109,005	2,386,880	158,254	5,138,402	62.5	3,088,948	2,535,691	2,453,023	1,727,790
	8 mos. 1,862	40,469,644	13,740,430	59,843,401	7,116,255	11,593,866	869,856	19,334,305	1,268,516	40,797,826	68.2	19,045,575	15,278,970	15,228,527	12,577,630
Pittsburgh & Lake Erie	Aug. 231	2,251,976	287,672	2,636,583	411,903	814,407	21,366	823,463	71,018	2,142,214	81.3	494,369	302,641	698,999	549,716
	8 mos. 231	18,450,221	1,998,322	21,218,131	2,928,899	6,474,846	184,382	6,872,838	583,109	17,042,894	80.3	4,175,237	2,769,979	5,671,170	5,441,770
New York, Chicago & St. Louis	Aug. 1,695	4,309,900	213,821	4,677,896	644,402	885,425	119,013	1,570,393	149,984	3,357,724	71.8	1,320,172	1,075,246	887,334	795,475
	8 mos. 1,695	32,974,336	1,308,264	35,525,062	4,677,953	6,509,963	972,684	12,531,910	1,267,390	25,842,081	72.7	9,682,981	7,701,554	6,616,944	5,266,731
N. Y., New Haven & Hartford	Aug. 1,918	5,869,796	4,522,265	11,530,555	1,685,549	2,382,758	82,393	3,898,909	295,169	8,510,399	73.8	3,020,156	2,596,052	2,014,528	1,720,083
	8 mos. 1,943	44,311,938	32,642,776	86,263,144	11,104,489	18,365,947	599,449	30,833,738	2,344,836	64,510,277	74.8	21,752,867	18,487,373	14,407,717	11,974,167
Central New England	Aug. 285	651,425	7,979	677,709	140,938	102,651	6,859	207,119	16,566	474,133	70.0	203,576	178,574	139,273	136,729
	8 mos. 289	4,904,964	71,733	5,138,372	906,993	888,073	48,023	1,626,383	122,515	3,591,970	69.9	1,546,402	1,344,164	1,024,006	1,077,763
New York Connecting	Aug. 20	224,532	.....	243,967	39,413	14,326	.....	52,178	1,344	107,261	44.0	136,706	100,306	110,919	148,102
	8 mos. 20	1,598,448	.....	1,803,414	142,279	94,312	.....	399,951	11,003	647,545	35.9	1,155,869	839,069	795,336	752,009
New York, Ontario & Western	Aug. 569	857,797	721,688	1,813,679	275,681	222,783	17,692	558,137	33,340	1,111,941	61.3	701,738	662,267	602,874	588,606
	8 mos. 569	5,830,614	2,183,473	9,522,874	1,316,956	1,765,142	133,472	3,834,604	286,511	7,374,155	77.4	2,148,719	1,807,803	1,463,635	1,260,913
Norfolk & Western	Aug. 2,241	8,569,936	771,440	9,642,154	1,354,543	1,907,975	96,173	2,360,856	161,073	5,855,843	60.7	3,786,311	3,135,766	3,370,061	1,838,633
	8 mos. 2,240	58,236,878	5,338,418	66,064,880	9,070,586	14,851,455	779,164	18,371,042	1,393,733	44,340,746	67.1	21,724,134	16,820,962	18,340,592	10,296,799
Norfolk Southern	Aug. 931	576,116	107,375	722,407	100,003	103,524	23,027	286,304	27,228	540,059	74.7	182,438	138,290	117,924	109,329
	8 mos. 931	4,879,811	696,686	5,916,515	808,691	858,815	187,042	2,358,432	228,449	4,442,869	75.1	1,473,646	1,108,863	837,866	935,524
Northern Pacific	Aug. 6,701	6,572,639	1,372,490	8,661,071	1,347,847	1,481,839	169,052	2,860,107	246,809	6,251,324	72.2	2,409,747	1,566,086	1,793,511	1,420,422
	8 mos. 6,695	44,434,923	9,036,863	58,873,416	9,259,147	11,651,044	1,445,665	21,735,855	2,017,235	46,852,717	79.6	12,020,699	6,433,352	8,886,486	7,677,169
Northern Pacific	Aug. 493	482,321	224,120	768,522	104,828	75,823	7,013	259,795	17,635	465,011	60.5	303,511	262,478	243,698	289,478
	8 mos. 490	2,650,508	1,473,194	4,557,307	756,934	653,596	54,127	1,827,650	140,330	3,431,008	75.3	1,126,299	766,940	678,265	849,340
Pennsylvania R. R.	Aug. 10,507	40,842,379	13,679,763	59,457,093	7,438,671	12,902,114	707,544	20,029,575	1,483,746	43,241,449	72.7	16,215,644	12,552,876	11,473,930	8,367,359
	8 mos. 10,507	299,371,487	96,000,788	434,437,096	53,917,789	106,605,867	5,375,408	160,883,020	12,086,430	344,424,320	79.3	90,012,776	69,113,694	59,675,098	51,939,316

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of—Way and structures.	Maintenance of—Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or less).	Net after rents.	Net after rents, 1924.
Baltimore, Chesapeake & Atlantic	Aug.	130	$96,064	$75,896	$179,974	$14,359	$16,507	$2,767	$86,866	$2,921	$123,420	68.6	$56,554	$45,525	$46,266	$53,843
	8 mos.	130	632,577	297,949	984,847	108,624	270,106	17,207	631,527	27,356	1,054,820	107.1	—69,973	—96,997	—101,314	—15,077
Long Island	Aug.	397	1,041,332	2,885,575	4,093,355	392,905	487,906	21,194	1,089,945	60,158	2,062,656	50.4	2,030,699	1,678,156	1,489,151	1,045,990
	8 mos.	397	7,048,301	16,435,498	25,044,428	3,153,120	3,973,309	184,074	9,824,676	559,908	17,768,396	70.9	7,276,032	5,806,066	4,787,890	3,191,236
West Jersey & Seashore	Aug.	368	453,791	1,353,256	1,890,351	207,569	211,028	35,829	589,614	35,741	1,080,993	57.2	809,358	425,251	385,279	440,979
	8 mos.	368	3,237,307	5,627,225	9,372,604	1,336,527	1,350,061	146,247	3,927,723	221,717	6,987,720	74.6	2,384,884	1,451,361	1,232,874	752,943
Peoria & Pekin Union	Aug.	19	27,292	1,752	159,658	37,026	14,035	644	58,451	7,363	117,519	73.6	42,139	24,139	48,883	28,814
	8 mos.	19	203,423	23,050	1,232,893	193,318	135,123	6,470	537,694	64,301	936,906	76.0	295,987	165,987	340,148	335,882
Pere Marquette	Aug.	2,263	3,106,650	523,224	3,877,674	448,006	754,260	57,787	1,236,057	98,348	2,603,245	67.1	1,274,429	1,075,583	986,856	856,371
	8 mos.	2,263	21,849,433	3,019,591	26,718,795	3,244,473	5,903,929	421,796	9,615,827	805,739	20,027,220	75.0	6,691,575	5,381,037	4,765,966	4,145,559
Pittsburg & Shawmut	Aug.	102	98,243	2,437	102,631	13,691	32,011	1,338	28,239	6,430	81,709	79.6	20,922	20,675	30,403	31,463
	8 mos.	102	746,062	33,704	796,598	112,994	262,463	11,011	236,217	53,706	676,391	84.9	120,187	99,577	147,723	80,329
Pittsburgh & West Virginia	Aug.	92	402,008	6,228	441,000	42,376	94,584	6,687	77,910	15,680	248,761	56.4	192,239	137,127	209,974	136,285
	8 mos.	92	2,812,164	57,340	3,140,196	323,373	756,407	48,835	601,226	141,450	1,964,526	62.6	1,175,670	828,645	1,310,999	939,858
Pittsburgh, Shawmut & Northern	Aug.	210	167,706	3,794	176,517	48,540	35,075	1,756	55,277	5,791	146,439	82.9	30,078	27,367	14,678	3,632
	8 mos.	210	1,137,740	28,554	1,195,159	219,036	282,636	14,928	425,440	49,950	991,990	83.0	203,169	181,614	131,629	—63,971
Quincy, Omaha & Kansas City	Aug.	250	111,952	15,211	135,983	37,881	15,033	1,126	40,066	2,501	96,546	71.0	39,437	34,788	31,098	—13,482
	8 mos.	250	457,543	127,551	644,980	226,361	112,719	6,718	340,237	21,942	705,741	109.4	—60,761	—97,835	—121,442	—127,241
Reading Company	Aug.	1,139	7,595,345	840,707	8,749,678	1,259,315	1,690,450	75,186	2,796,747	167,017	5,987,676	68.4	2,762,002	2,395,570	2,569,456	1,596,111
	8 mos.	1,139	53,233,498	6,626,763	62,639,552	8,125,442	14,132,526	571,952	22,527,465	1,417,737	46,732,657	74.6	15,906,895	12,969,841	13,899,704	11,586,455
Atlantic City	Aug.	169	177,513	717,224	913,513	69,744	43,287	9,665	278,571	4,295	405,683	44.4	507,830	485,134	433,007	345,554
	8 mos.	169	1,111,214	2,431,060	3,675,047	691,189	324,027	65,426	1,673,037	41,223	2,795,590	76.1	879,457	697,868	440,859	140,073
Perkiomen	Aug.	41	122,124	7,708	133,124	12,300	5,967	106	47,154	790	66,376	49.9	66,748	61,560	55,737	21,879
	8 mos.	41	801,708	50,762	880,560	79,826	43,196	861	372,962	6,389	503,601	57.2	376,959	335,535	294,537	240,653
Port Reading	Aug.	19	210,959	.....	305,667	26,669	25,017	229	69,283	1,373	122,571	40.1	183,096	167,734	100,747	—12,161
	8 mos.	19	1,256,303	.....	1,716,655	192,265	78,775	1,832	541,072	19,936	833,844	48.6	882,811	755,653	208,065	—13,516
Richmond, Fred'ksburg & Potomac	Aug.	117	486,529	430,031	1,070,058	101,631	157,059	8,000	299,188	34,440	622,389	58.2	447,669	375,065	336,685	236,965
	8 mos.	117	4,223,447	3,003,207	8,644,195	860,511	1,286,608	70,670	2,718,377	276,080	5,434,546	62.9	3,209,649	2,696,819	2,208,730	1,874,139
Rutland	Aug.	413	323,903	140,713	599,713	115,327	104,466	9,951	215,491	12,467	459,829	76.7	139,884	106,802	113,841	86,204
	8 mos.	413	2,523,366	822,146	4,256,380	807,909	862,258	78,234	1,763,810	108,263	3,633,377	85.4	623,003	417,624	495,180	563,541
St. Louis-San Francisco	Aug.	4,902	6,024,344	1,535,560	8,038,867	1,035,611	1,625,422	94,021	2,462,127	225,938	5,408,907	67.3	2,679,960	2,186,768	2,074,655	1,871,450
	8 mos.	4,902	42,594,682	10,925,333	57,432,102	6,865,552	11,455,867	837,906	19,461,119	1,837,022	40,302,483	70.2	17,129,619	14,109,577	13,789,087	12,302,404
Ft. Worth & Rio Grande	Aug.	233	83,734	19,891	113,376	31,312	22,137	2,884	51,213	4,281	111,792	98.6	1,584	—2,449	—12,053	7,688
	8 mos.	233	641,501	150,911	870,513	186,582	181,082	25,450	436,760	38,455	867,547	99.7	2,966	—29,416	—103,695	4,379
St. Louis, San Francisco & Tex.	Aug.	137	170,189	12,548	188,908	33,060	30,502	5,095	65,676	7,392	141,020	74.7	47,888	45,554	21,018	33,608
	8 mos.	137	1,235,286	100,877	1,382,729	217,005	228,185	39,998	496,190	57,847	1,038,501	75.1	344,228	324,843	125,131	58,388
St. Louis Southwestern	Aug.	940	1,234,191	138,433	1,445,187	231,416	296,644	54,041	350,971	62,706	1,010,127	69.9	435,060	372,815	327,412	311,517
	8 mos.	944	9,901,558	1,004,171	11,534,456	1,631,387	2,507,737	411,270	2,907,737	497,157	8,079,678	70.0	3,454,778	3,022,598	2,440,938	2,358,248
St. Louis Southwestern of Texas	Aug.	807	493,404	76,300	613,770	160,881	146,587	22,696	241,489	31,636	598,448	97.5	15,322	—11,516	45,881	26,631
	8 mos.	807	3,907,170	563,187	4,836,825	1,220,462	1,359,159	182,506	1,986,920	252,270	5,015,304	103.7	—178,479	—394,575	—14,280	—9,698
San Antonio, Uvalde & Gulf	Aug.	318	98,316	17,242	126,637	21,025	17,027	4,812	45,724	5,797	93,752	74.0	32,885	29,261	22,154	43,837
	8 mos.	318	807,398	128,466	1,024,421	168,838	120,408	38,453	406,450	50,271	783,832	76.5	240,589	210,905	130,761	107,477
Seaboard Air Line	Aug.	3,775	3,303,542	1,104,665	4,869,596	578,033	761,721	177,433	1,745,391	175,944	3,504,192	72.0	1,365,404	1,056,086	978,853	702,532
	8 mos.	3,764	27,818,289	7,736,345	39,495,901	5,028,952	6,470,072	1,374,736	14,918,223	1,389,348	29,751,440	75.3	9,744,461	7,834,887	6,657,845	5,895,049
Southern Ry.	Aug.	6,868	8,713,197	2,952,989	12,565,352	1,702,460	2,236,502	189,457	3,957,641	322,542	8,494,262	67.6	4,071,090	3,256,891	3,325,580	2,738,134
	8 mos.	6,868	68,287,728	20,101,277	95,713,213	13,923,074	17,159,571	1,855,213	32,574,491	2,542,237	68,743,140	71.8	26,970,073	21,221,618	20,656,970	17,596,506
Alabama Great Southern	Aug.	318	638,895	205,022	897,953	150,852	161,404	25,289	253,304	23,382	624,206	69.5	273,747	214,586	244,758	243,868
	8 mos.	318	5,012,653	1,321,921	6,729,834	1,037,775	1,293,335	168,259	2,056,596	192,368	4,801,673	71.3	1,928,161	1,511,143	1,668,193	1,448,314
Cin., New Orleans & Tex. Pacific	Aug.	338	1,469,215	423,412	2,000,110	241,621	363,643	61,882	499,113	45,366	1,223,311	61.2	776,799	650,567	644,235	528,588
	8 mos.	338	11,582,614	2,875,973	15,273,835	2,038,868	2,710,465	342,579	4,225,767	395,636	9,840,135	64.4	5,433,700	4,628,409	4,481,210	3,457,761
Georgia Southern & Florida	Aug.	401	381,047	205,354	627,580	70,935	78,385	27,771	201,930	10,640	394,917	62.9	232,663	193,380	153,268	66,066
	8 mos.	401	2,618,721	1,143,570	4,122,612	522,717	537,091	99,981	1,413,163	84,509	2,660,903	65.5	1,422,709	1,192,669	901,071	365,342
New Orleans & Northeastern	Aug.	207	387,511	88,374	511,056	68,805	79,496	16,379	133,779	13,764	318,331	62.3	192,725	134,876	111,808	80,905
	8 mos.	207	2,935,774	642,475	3,837,558	496,673	593,675	98,320	1,100,601	118,494	2,438,677	63.5	1,398,881	987,490	841,537	744,737
Northern Alabama	Aug.	110	129,007	10,190	142,150	28,164	4,990	3,349	41,434	2,824	80,761	56.8	61,389	56,953	27,979	—1,041
	8 mos.	110	922,599	80,423	1,026,652	184,065	38,174	18,529	310,429	24,888	576,061	56.1	450,591	398,260	174,270	130,432
Southern Pacific	Aug.	8,718	12,937,038	4,036,673	18,564,066	2,248,703	2,453,248	331,474	6,237,694	612,984	12,127,412	65.3	6,436,654	5,018,787	4,759,610	4,101,293
	8 mos.	8,721	91,559,272	28,982,555	133,359,372	19,346,555	22,909,975	2,510,435	48,542,923	4,610,528	99,842,256	74.9	33,517,116	22,636,051	21,132,354	24,873,877
Atlantic Steamship Lines	Aug.	...	671,446	40,923	808,257	14,902	255,579	14,719	534,315	50,311	869,826	107.6	—61,569	—76,106	—76,237	82,417
	8 mos.	...	5,900,851	344,370	7,276,992	125,929	1,784,118	144,963	5,298,029	261,585	7,614,624	104.6	—337,632	—454,408	—456,176	28,151

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1925—CONTINUED

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or less).	Net after rents.	Net after rents, 1924.
Galveston, Harrisb'g & S. Antonio	Aug.	2,096	$1,964,998	$435,080	$2,558,234	$483,437	$416,134	$48,046	$878,126	$112,762	$1,960,106	76.6	$598,128	$506,061	$440,268	$587,526
	8 mos.	1,742	14,284,625	3,429,742	18,987,093	3,708,073	4,054,924	429,823	6,857,223	917,648	16,130,141	85.0	2,856,952	2,171,710	1,603,147	2,646,111
Houston & Texas Central	Aug.	929	754,761	246,987	1,074,209	191,034	245,236	25,644	390,641	47,444	899,730	83.8	174,479	111,087	102,715	244,413
	8 mos.	929	6,830,636	1,986,647	9,454,858	1,896,146	1,882,562	215,208	3,275,204	379,514	7,655,151	81.0	1,799,707	1,303,777	935,401	587,188
Houston, East & West Texas	Aug.	191	247,788	42,604	302,672	40,338	51,402	3,157	94,278	8,979	197,441	65.2	105,231	89,714	70,202	48,669
	8 mos.	191	1,726,309	301,008	2,125,881	434,418	403,119	29,680	728,270	74,453	1,667,146	78.4	458,735	374,256	236,507	—61,922
Louisiana Western	Aug.	207	244,441	78,899	343,683	44,199	61,434	13,454	113,007	19,404	255,266	74.3	88,417	61,451	53,360	55,619
	8 mos.	207	1,890,700	618,409	2,692,312	453,692	553,751	99,637	846,122	154,507	2,139,052	79.4	553,260	372,647	315,508	408,451
Morgan's L. & T R. R. & S. S. Co.	Aug.	400	502,794	131,520	686,307	93,335	170,903	22,254	292,173	38,466	621,137	90.5	65,170	15,108	—5,613	63,168
	8 mos.	400	3,928,615	987,711	5,312,845	886,163	1,324,359	161,036	2,333,108	304,607	5,046,621	95.0	266,224	—139,463	—388,235	—420,494
Texas & New Orleans	Aug.	544	780,847	145,801	981,623	156,500	187,210	12,295	324,497	33,283	716,019	72.9	265,604	233,425	158,648	30,889
	8 mos.	539	5,637,113	1,190,196	7,235,085	1,224,780	1,644,513	109,553	2,484,317	267,620	5,756,768	79.6	1,478,317	1,220,493	956,152	—70,524
Spokane, Portland & Seattle	Aug.	554	531,461	164,969	770,988	142,244	79,921	11,265	241,615	19,992	503,993	65.4	266,995	190,429	180,934	185,360
	8 mos.	554	3,504,442	980,810	5,020,773	680,992	825,519	85,470	1,620,480	168,278	3,446,576	68.6	1,574,197	970,203	825,263	1,219,323
Tennessee Central	Aug.	296	247,184	40,518	300,515	52,153	40,028	7,614	99,595	11,300	210,483	70.0	90,032	79,512	51,464	24,732
	8 mos.	296	1,654,127	291,972	2,065,406	357,973	322,542	58,904	745,183	87,968	1,571,925	76.1	493,481	437,717	269,495	264,744
Term. Railroad Assoc. of St. Louis	Aug.	37	.....	.....	434,833	75,739	48,102	1,250	141,323	7,870	278,474	64.0	156,359	86,349	184,376	166,636
	8 mos.	37	.....	.....	3,348,036	534,473	349,190	8,053	1,207,313	68,181	2,195,153	65.6	1,152,883	639,534	1,431,320	1,120,258
East St. Louis Connecting	Aug.	1	.....	.....	190,365	24,808	16,104	395	61,873	4,927	108,107	56.8	82,258	76,714	57,279	66,476
	8 mos.	1	.....	.....	1,487,905	178,799	94,669	2,546	545,685	25,141	846,840	56.9	641,065	601,509	435,883	399,061
St. L. Merchants' Bridge Term	Aug.	9	.....	.....	432,258	74,668	33,896	1,182	177,091	6,477	293,314	67.9	138,944	109,328	123,122	66,773
	8 mos.	9	.....	.....	3,186,294	605,650	220,385	7,615	1,422,304	61,634	2,317,588	72.7	868,706	644,451	668,031	382,459
St. Louis Transfer Ry	Aug.	6	.....	.....	65,653	10,212	7,587	213	31,123	3,685	52,820	80.5	12,833	12,450	7,131	11,650
	8 mos.	6	.....	.....	518,592	87,428	44,669	1,372	282,140	14,563	430,172	82.9	88,420	85,243	39,019	16,990
Toledo, Peoria & Western	Aug.	247	125,935	22,646	161,384	26,408	41,393	2,161	72,057	6,763	148,708	92.1	12,676	6,676	—5,161	—23,911
	8 mos.	247	786,751	193,228	1,067,352	204,563	309,679	18,101	552,503	56,668	1,141,340	106.9	—73,988	—122,045	—184,046	—24,142
Trinity & Brazos Valley	Aug.	367	112,205	12,523	130,632	63,687	45,017	4,294	64,029	11,015	187,711	143.7	—57,079	—64,794	—76,150	—9,349
	8 mos.	368	1,494,957	92,774	1,647,443	470,186	409,100	31,888	769,621	94,698	1,771,917	107.6	—124,474	—186,690	—393,759	—488,708
Ulster & Delaware	Aug.	128	74,090	93,839	208,212	27,342	16,760	1,987	81,365	5,946	133,400	64.1	74,812	69,312	57,132	66,995
	8 mos.	128	454,546	259,456	995,064	159,846	145,016	15,379	467,502	49,680	837,423	84.1	157,641	113,639	71,550	111,360
Union Railroad of Penna	Aug.	45	.....	.....	993,701	96,856	161,284	148	390,458	9,050	657,757	66.2	335,944	294,367	354,395	178,818
	8 mos.	45	.....	.....	7,678,118	789,384	1,906,491	1,420	3,331,000	79,300	6,107,556	79.5	1,570,562	1,376,959	1,793,458	869,489
Union Pacific	Aug.	3,687	7,583,875	1,753,908	10,284,664	1,627,779	2,256,202	142,352	2,559,063	290,730	7,117,202	69.2	3,167,462	2,685,737	2,334,961	2,588,314
	8 mos.	3,687	46,380,139	11,288,124	63,921,607	8,397,349	13,726,971	1,320,994	17,794,979	2,247,014	44,939,697	70.3	18,981,910	14,068,753	13,353,656	13,411,098
Oregon Short Line	Aug.	2,444	2,312,706	530,522	3,111,131	904,965	445,594	48,535	929,531	109,733	2,514,374	80.8	596,757	396,161	304,895	401,731
	8 mos.	2,431	15,553,208	3,261,945	20,465,976	4,109,555	3,848,101	403,503	6,541,123	853,037	16,228,764	79.3	4,237,212	2,355,991	1,978,421	2,544,777
Oregon, Wash. R. R. & Nav. Co.	Aug.	2,237	2,004,813	446,896	2,668,605	529,927	302,054	61,863	927,219	109,787	1,956,448	73.3	712,157	542,226	426,479	194,318
	8 mos.	2,237	12,631,786	3,087,050	17,340,588	3,378,006	2,831,239	531,961	6,739,793	919,109	14,630,326	84.4	2,710,262	1,349,627	632,968	1,531,845
Los Angeles & Salt Lake	Aug.	1,207	1,323,175	553,515	2,097,422	334,239	263,893	59,296	665,440	71,956	1,493,886	71.2	603,536	479,704	387,976	58,183
	8 mos.	1,207	10,619,462	3,474,445	15,565,535	2,524,011	2,987,761	537,241	5,206,910	524,697	12,383,031	79.6	3,182,504	2,089,615	1,463,435	1,385,873
St. Joseph & Grand Island	Aug.	258	256,153	20,525	297,461	57,097	6,801	2,845	97,626	12,508	176,877	59.5	120,584	114,181	95,704	64,668
	8 mos.	258	1,784,863	152,740	2,076,529	400,783	351,830	23,077	761,800	97,053	1,635,046	78.7	441,483	328,526	236,313	163,115
Utah	Aug.	102	144,947	219	145,908	22,763	38,217	346	29,484	5,180	95,986	65.8	49,922	41,810	39,146	27,532
	8 mos.	102	1,009,509	2,282	1,018,334	122,479	312,070	2,916	231,186	46,713	715,350	70.3	302,984	244,535	208,888	121,966
Virginian	Aug.	545	1,433,707	59,890	1,600,995	215,594	354,001	12,790	370,356	27,611	974,471	60.9	626,524	531,745	596,316	526,056
	8 mos.	545	10,926,649	469,374	12,262,279	1,911,902	2,766,831	103,364	2,942,908	265,677	7,935,704	64.7	4,326,575	3,421,983	3,646,523	3,247,302
Wabash	Aug.	2,524	4,775,741	948,642	6,134,214	935,796	1,044,849	165,355	2,064,957	162,087	4,404,307	71.8	1,729,907	1,454,198	1,175,258	1,128,759
	8 mos.	2,524	35,572,618	6,124,668	44,906,913	6,462,217	8,302,786	1,202,032	16,721,428	1,309,863	34,224,186	76.2	10,682,727	8,737,160	6,532,793	5,006,082
Western Maryland	Aug.	804	1,627,328	81,328	1,771,126	216,922	384,512	37,527	469,553	40,792	1,159,811	65.5	611,315	546,315	548,570	254,657
	8 mos.	804	11,838,051	475,969	12,921,025	1,706,635	2,782,669	298,563	3,770,817	355,759	9,002,166	69.7	3,918,859	3,408,859	3,063,128	2,291,787
Western Pacific	Aug.	1,042	1,191,219	274,279	1,589,105	218,460	211,840	39,796	491,869	35,460	1,060,827	66.8	528,278	449,197	533,822	423,676
	8 mos.	1,042	6,989,627	1,427,916	9,088,914	1,518,492	1,618,495	309,069	3,166,400	285,826	7,145,650	78.6	1,943,264	1,310,281	2,114,694	1,024,625
Wheeling & Lake Erie	Aug.	511	1,660,613	50,315	1,825,001	272,839	393,510	30,747	483,038	52,837	1,214,819	67.7	590,182	442,615	439,164	223,362
	8 mos.	511	11,943,276	386,929	13,141,420	1,723,638	3,059,070	234,719	3,963,343	381,842	9,380,664	71.4	3,760,756	2,706,168	2,678,698	1,454,903

General News Department

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towards the construction of the new Rouyn Mines Railway. The Dominion government has undertaken to guarantee a bond issue of $5,000,000 to allow the building of the road to be proceeded with. The bond issue is a 30-year 4½ per cent gold, maturing in 1955. It is stipulated that the construction work must start before November 1 this year, and that the railway must be completed and ready for regular operation on or before December 1 next year. The federal government will act as the lessee. The Quebec government subsidy of $250,000 is to be paid in five equal instalments, but no part is to be paid before February 1, 1928.

N. Y. Railroad Club to Hear Talks by Young Men

At the next meeting of the New York Railroad Club to be held at the Engineering Societies Building, 29 West Thirty-ninth street, New York, on October 16, seven young men will give ten-minute talks on railroad work from their point of view. The speakers and subjects will be:

Leo Downs, machinist's apprentice, Lehigh Valley, Waverly, N. Y.—The Younger Men's Conference of the Railroad Y. M. C. A.

John MacMurray, a senior in the engineering department at Princeton University –Experiences in a D. & H. Summer Engineering Camp.

C. F. Phillips, special apprentice, mechanical department, New York Central, Albany, N. Y.—Experiences as a Special Apprentice.

Strother Keiser, clerk, C. & O., Russell, Ky.—Relations of the Railroad with Young Men Employees.

Charles E. Alexander, transportation apprentice, P. R. R.—The Work of a Transportation Apprentice.

Forrest Hollands, general foreman, maintenance department, Erie—What Can Be Done to Help the Young Men in the Maintenance Department.

Harry E. Norton, division accountant, N. Y., N. H. & H., New York—Division Accounting, Its Growth and Opportunities.

Motion pictures of the club's outing at Travers Island in July last will be shown and other entertainment features provided.

Wage Statistics for July

Class I railroads reported to the Interstate Commerce Commission a total of 1,795,669 employees for the month of July, 1925, an increase of 13,973 over the returns for the previous month. The total compensation increased $5,641,770, or 2.4 per cent. The difference in the percentage increase in employment and compensation is due to an increase in the average number of hours worked per employee. Compared with last year, employment shows an increase of 1.3 per cent, while the total compensation increased 3.9 per cent. The percentage difference between the employment and compensation is due to an increase in the number of hours worked per employee coupled with an increase of 5 mills in the average straight time hourly earnings, and 9 mills in the overtime earnings.

The number of employees at the middle of the month was as follows:

Group	July 1925	Increase over June 1925	Increase over July 1924
Executives, officials, and staff assistants	16,447	11	204
Professional, clerical, and general	282,466	656	1,384
Maintenance of way and structures	431,517	9,144	9,689
Maintenance of equipment and stores	517,921	(d) 82	1,548
Transportation (other than train, engine, and yard)	208,873	611	1,260
Transportation (yardmasters, etc.)	23,845	88	(d) 265
Transportation (train and engine service)	314,600	3,545	8,735
Total	1,795,669	13,973	22,555

(d) Decrease.

Additional Airplane Mail Routes

The postmaster general announced on Wednesday of this week that proposals have been accepted for operating new airplane mail lines, soon to be established, as follows: New York-Boston route to Colonial Air Lines, Inc., Naugatuck, Conn.; Chicago-St. Louis, Robertson Aircraft Corporation, St. Louis, Mo.; Chicago-Dallas-Fort Worth, National Air Transport, Inc., of Chicago; Salt Lake City-Los Angeles, Western Air Express, Inc., of Los Angeles; Elko-Pasco, Walter T. Varney, of San Francisco. No awards were made for the Chicago-Birmingham and Chicago-St. Paul-Minneapolis routes.

Proposals for four additional routes will be opened on November 21.

Actions Speak Louder Than Words

The above title denotes the theme of an editorial in a recent issue of "Industry" the organ of the Association Industries of Massachusetts, entitled "The Railroads and Public Opinion." Prefacing his discussion with the observation that the railroads are very much behind time in awaking to the importance of a favorable public opinion, the editor says, in part:

Almost every mail brings evidence that the railroads are making tremendous efforts to enlist the good will of the public. A vast amount of publicity matter is sent out in the form of pamphlets and newspaper articles for the purpose of improving the general level of sympathy with the railroads. These endeavors on the part of the railroads are commendable. On the other hand to the extent that such a publicity program takes the place of sound and reasonable practices, it is to be roundly condemned. Public opinion cannot be moulded entirely by consciously designed advertising. The deepest and most lasting impressions are those gained by the public which has to deal with the railroads through actual contact with railroad efficiency or inefficiency; courtesy and intelligence, or discourtesy and unintelligence. There is more power for good in having one courteous, intelligent, eager-to-be-helpful information clerk, or ticket seller, than a thousand reams of the publicity agent's stuff; more power for good in one traffic official who actually tries to understand the problems of the industries than in a thousand after-dinner speeches.

Then, too, there is the policy of some railroads' purchasing departments. The road to economy does not invariably follow the line of the bargain counters. The railroads apparently do not realize that when they turn down the products of an honest, efficiently managed business for the sake of price alone without regard to enduring values, they are also turning down the very class of good business men who would be most likely to have surplus earnings to invest in railroads. The conservative business man viewing such a policy of cheapness regardless of quality finds his sympathy for the railroads alienated. Mighty indeed is the printed word! Mightier still is the personal impression gained from actual experience with men and policies!

Revenues and Expenses for August

Class I carriers having a total mileage of 236,645 miles had gross operating revenues in August amounting to $555,366,570, an increase of $46,860,750 or 9.2 per cent, as compared with the same month last year, according to reports compiled by the Bureau of Railway Economics. Operating expenses totaled $388,869,550, an increase of $15,198,375 or 4.1 per cent, although freight traffic in August this year, measured in net ton miles, was nearly fifteen per cent greater than in August, 1924.

The net operating income in August was $124,804,665, as compared with $95,706,867 in August last year. The net railway operating income for the first eight months this year amounted to $662,762,605, which was at the annual rate of return of 4.65 per cent on property investment, compared with $562,425,203 or 4.08 per cent, for the same period last year.

Earnings by districts for the first eight months this year, with the percentage of return based on property investment on an annual basis, were as follows:

New England Region	$25,902,004	4.18%
Great Lakes Region	135,019,138	5.48%
Central Eastern Region	147,762,934	4.85%
Pocahontas Region	43,264,987	7.12%
Total Eastern District	351,949,063	5.22%
Total Southern District	102,208,161	5.86%
Northwestern Region	57,343,184	3.09%
Central Western Region	98,372,603	3.69%
Southwestern Region	52,889,594	4.29%
Total Western District	208,605,381	3.62%
United States	662,762,605	4.65%

Twelve Class I railroads operated at a loss during the month of August, of which three were in the Eastern district and nine in the Western district.

Expenditures for maintenance in August amounted to $182,986,296, an increase of $8,408,000 or nearly five per cent over August last year. Maintenance of way expenditures alone in August totaled $77,486,514, an increase of $4,460,000 or 6.1 per cent. Expenditures for maintenance of equipment totaled $105,499,782, an increase of $3,947,650 or nearly 4 per cent.

Carriers in the Eastern district had a net operating income in August of $64,617,103, compared with $46,792,361 in August last

year. Freight traffic in the Eastern district in August, according to incomplete reports, was about 20 per cent above that of the corresponding period last year. Gross operating revenues of the Eastern carriers totaled $279,326,589, an increase of 12.1 per cent. Operating expenses totaled $194,779,827, an increase of 5.9 per cent. Class I carriers in the Eastern district during the first eight months this year had a net operating income amounting to $351,949,000, compared with $286,701,382 during the corresponding period last year.

Class I carriers in the Southern district in August had a net operating income of $15,043,192, compared with $10,947,353 in August last year. Freight traffic on the Southern roads in August was about 18.5 per cent above that of the same month last year. Gross operating revenues of the Southern carriers in August totaled $70,056,705, an increase of 13.1 per cent, while operating expenses totaled $50,230,643, an increase of 6.5 per cent. The net operating income for the Class I railroads for the first eight months this year in the Southern district was $102,208,161, compared with $87,968,972 during the same period last year.

Carriers in the Western district had a net operating income in August of $45,144,370 compared with $37,967,153 for the same month last year. Freight traffic in the Western district showed an increase of approximately six per cent over that of August, 1924. Gross operating revenues of the Western carriers totaled $205,983,279, an increase of 4.4 per cent over August last year, while operating expenses totaled $143,859,088, an increase of nine-tenths of one per cent. Class I carriers in the Western district during the first eight months this year had a net operating income of $208,605,381, compared with $187,754,849 during the same period one year ago.

Bridge and Building Convention Program

The American Railway Bridge and Building Association will hold its thirty-fifth annual convention at the Hotel Statler, Buffalo, N. Y., on October 20-22. A special train will be provided by the Michigan Central to convey members and their guests from Chicago to Buffalo, leaving Chicago at nine o'clock on Sunday evening, October 18, stopping for several hours at Niagara Falls to visit the new Michigan Central bridge across the Niagara gorge and other points of interest, and arriving at Buffalo late Monday afternoon.

The program for the convention is as follows:

TUESDAY, OCTOBER 20

10:00 a. m. Convention called to order.
Address by F. M. Barker, superintendent, Lehigh Valley, Buffalo, N. Y.
Reports of officers.
Report of Committee on the Use of Motor Cars by Bridge and Building Gangs, H. N. Huntsman, division engineer, Wabash, Moberly, Mo., chairman.

TUESDAY AFTERNOON

Report of Committee on Pre-cast Units Used in Bridge Construction and Maintenance, T. H. Strate, engineer track elevation, Chicago, Milwaukee & St. Paul, Chicago, chairman.
Paper on The Treatment of Water for Locomotive Use, by R. C. Bardwell, superintendent water supply, Chesapeake & Ohio, Richmond, Va.
Report of Committee on the Use of Electricity for the Operation of Water Stations, J. M. Fitzgerald, chief engineer's office, Central of Georgia, Savannah, Ga., chairman.

TUESDAY EVENING

George J. Ray, chief engineer of the Delaware, Lackawanna & Western, will give an illustrated talk on some of the important structures on that road.

WEDNESDAY MORNING

Report of Committee on the Use of Creosoted Timber, Including the Selection of Woods Best Adapted to Treatment, I. D. Simmons, bridge engineer, Chicago, Rock Island & Pacific, Chicago, chairman.
Address on The Erection of the Michigan Central Bridge at Niagara Falls, by H. Ibsen, special bridge engineer, Michigan Central, Detroit, Mich.
Report of the Committee on the Application of Protective Coatings to Structural Steel, E. F. Manson, division engineer, Chicago, Rock Island & Pacific, Trenton, Mo., chairman.

WEDNESDAY AFTERNOON

Report of the Committee on the Relative Merits of Steel and Metal Window Sash for Various Types of Railroad Buildings, F. N. Graham, assistant engineer, Duluth, Missabe & Northern, Duluth, Minn., chairman.
Address by Frank H. Alfred, president, Pere Marquette, Detroit, Mich.
Report of the Committee on Economic Methods of Handling Minor Jobs of Maintenance Work, F. W. Hillman, division engineer, Chicago & North Western, Chicago, chairman.

WEDNESDAY EVENING

Annual dinner of the American Railway Bridge and Building Association and the Bridge and Building Supply Men's Association.

THURSDAY MORNING

Report of the Committee on the Reduction of Accidents to Employees, F. C. Baluss, engineer bridges and buildings, Duluth, Missabe & Northern, Duluth, Minn., chairman.
Election of officers, selection of meeting place and closing business.

Traffic News

The Mid-West Regional Advisory Board will hold its fall meeting at Des Moines, Ia., on October 21.

A regular daily sleeping car between Boston and New Orleans is announced by the New York, New Haven & Hartford. The car is a part of the Colonial Express on the New Haven and the Pennsylvania and of the Piedmont Limited on the Southern.

The results of reduced rate excursions on the National Railways of Mexico during September have been so satisfactory that special excursion rates will be put into effect at frequent intervals hereafter. The occasion for the reduced rates during September was a celebration in Mexico City which began on September 16 and lasted a week.

The fall meeting of the Midwest Regional Advisory Board will be held at Des Moines, Ia., on October 21. Farming will be emphasized at the meeting and stress will be placed on the reports of the various agricultural committees. Dr. R. A. Pearson, president of the Iowa State College of Agriculture and Mechanical Arts, will be the principal speaker at the banquet. The governor of Iowa will be present.

The Atlantic States Shippers' Advisory Board has appointed committees in the principal cities within its territory at which fruit is received, to pay special attention to grape shipments from California which are very heavy at this season. The total volume expected from California is 55,000 carloads of grapes for the year, which number was the record of 1924. Thus far this season about 85 per cent of the refrigerator cars arriving at these terminals have been unloaded within the free time.

The chief traffic officers of the southern railroads have filed a statement with the Interstate Commerce Commission asking a reconsideration of its recent decision requiring a general readjustment of class rates throughout the South, in the Southern Class Rate Investigation case, and giving their reasons why the southern carriers are unable and unwilling to accept the findings of the report. They say that the decision is totally at variance with all previous decisions of the commission and occasions no small concern as to the stability of the rate system of the South. The commission is urged to reconsider its findings, particularly as they pertain to the interterritorial adjustment, and to use the carriers' proposals, including their system of groupings and differentials, in place of "untried theories" which they contend are unworkable.

Hearing on Westbound Canadian Grain Rates

Argument for and against the application of the Montreal Board of Trade, the Canadian Pacific, the Winnipeg Board of Trade and the provincial governments of Manitoba, New Brunswick and Nova Scotia for a recision of the Dominion Railway Board's order of September 2 giving Crow's Nest Pass Agreement rates on grain and flour westbound from the prairie provinces for export from Vancouver was concluded before the Board in Ottawa late last week. It is expected, in view of remarks made by its various members in the hearing, that three of the Board will favor recision and three will oppose it, in which case the order would continue in effect. Such a decision was anticipated by Eugene Lafleur of Montreal, representing the Board of Trade of that city, when near the close of the hearing he stated that if the application for recision were not granted he would advise his clients to appeal to the Supreme Court of Canada on points of law.

Assuming that the order is not rescinded Sydney B. Woods, representing the provinces of Alberta and Saskatchewan, and Gerald G. McGeer, representing the province of British Columbia (those three provinces will gain considerable advantage from the rates made effective under the order) on Thursday of last week, after a conference with W. N. Tilley and E. P. Flintoft, counsel for the Canadian Pacific, requested the Board to adjourn the two applications of the provinces of Alberta and Saskatchewan, the effect of which is that the recent order be enforced, that the railways be compelled by the Board to put into effect rates strictly in compliance with the order. They contend that the railways are

not obeying the order by applying rates which in some parts of the two provinces named are actually higher than those prevailing previous to the order. By agreement the Canadian Pacific will produce to the traffic expert of the Board a copy of the rate tariff originally effective when the Crow's Nest Pass Agreement became operative in 1898. Counsel for Alberta and Saskatchewan said with that original tariff they could more clearly determine to what extent the Canadian Pacific and the Canadian National, which has to meet the former's rates, have disobeyed the order.

Counsel for those applying for recision of the September 2 order argued through the hearing that the order was ultra vires of the powers of the Railway Board, that the two members of the Board who heard the British Columbia case in November last year and later announced that a decision would be made at once—Chief Commissioner H. A. McKeown and Commissioner Frank Oliver—had no right to issue a judgment without giving the other members of the Board the opportunity of reviewing the evidence. They also argued that this procedure was clearly in violation of the spirit of the Order in Council issued by the federal Cabinet in June last and which formed the basis of the legislation passed by the federal Parliament giving instructions to the Railway Board to institute an investigation of the general freight rate situation throughout Canada preparatory to an equalization of rates as between different sections of the country. Such instructions, they contended, precluded the order of September 2 last which dealt with only one section of the country and was made before the general investigation.

Those opposing recision of the order—the three extreme Western provinces—declared that the two commissioners were quite within the powers conferred upon the Board in hearing the British Columbia case and giving judgment, and that the British Columbia order could be considered as nothing else than the first logical step in the process of equalization of rates as between various sections of the country.

After the Western rates case was disposed of the Board on Friday of last week heard the application of the Dominion Millers' Association and the Ontario Department of Agriculture for a removal of the differential between flour and grain rates from Ontario and Quebec points for export through New York. The Dominion Millers' Association complained that present tariffs of railway companies on the product of ex-lake grain milled in transit and exported via New York discriminate in favor of Chicago, Detroit, Toledo and other centres in that region. Senator Lynch-Staunton, appearing for the Ontario Department of Agriculture, said he did not care how the differential was removed so long as that result was secured. There was no differential in Western Canada, and Central Canada wanted to be placed on the same basis.

Railway Mail Pay

The Interstate Commerce Commission has issued an additional finding and supplemental order with respect to the rates for the transportation of 15-foot and 30-foot units of storage space for the carriage of United States mails providing that the rates of payment for the transportation of mail matter by the Bingham & Garfield, the California Western, the Great Southern, the Indian Valley, the Lake Tahoe Railway & Transportation, the McCloud River, the Nevada Central, the Nevada County Narrow Gauge, the Nevada Northern, the Pacific & Idaho Northern, the Quincy, the Ray & Gila Valley, the Sacramento Valley & Eastern, the San Diego & Arizona, the San Luis Southern, the Sierra of California, the Spokane International, the Sumpter Valley, the Colorado, Wyoming & Eastern, the Nevada Copper Belt, the Washington, Idaho & Montana, the Yreka, and the Yosemite Valley railroads in the units of space described, be established as fair and reasonable rates to be received on and after October 15, 1925, as follows:

For each mile of service	For railroads over 100 miles in length Cents	For separately operated railroads 50 to 99 miles in length Cents	For separately operated railroads less than 50 miles in length Cents
By a 30-foot storage space....	37.5	45	56.25
By a 15-foot storage space....	20	24	30

An application by the same carriers for the issuance of an order fixing as the reasonable rates for the period June 30, 1921, to January 22, 1925, the rates found reasonable and prescribed for the future on January 22, 1925, was ordered set for argument in connection with the reargument granted by order entered on June 1, 1925, upon application of the Postmaster General for rehearing and revision of the finding made as to that period in a previous report of the commission.

Eastern Freight Rate Investigation Continues

The hearing on the petition of carriers for the upward revision of rates in official classification territory, which was started in Chicago on September 21, was continued throughout this week. A separate hearing on the revision of rates on iron and steel products with a view to establishing commodity in place of class rates, was urged by spokesmen for iron and steel interests. This action was urged because of the highly competitive nature of the markets and because of the keen rivalry among carriers for this class of tonnage, by representatives of the American Bridge Company, the American Sheet & Tin Plate Company, the American Steel & Wire Company, the Carnegie Steel Company, the H. C. Frick Coke Company, the Illinois Steel Company, the Lorain Steel Company, the National Tube Company, the United States Coal & Coke Company and the Universal Portland Cement Company.

L. C. Behler, traffic representative of the American Bridge Company, testified that no revision of the class rate structure would be adequate to meet the demands of the iron and steel business as it operates mostly on a mileage basis.

H. T. Rhodehouse, traffic manager of the Youngstown Chamber of Commerce, saw that the Youngstown district could not compete with the Pittsburgh district under the present class rates. The same contention was made by R. B. Robinson of the Canton (Ohio) Chamber of Commerce.

Samuel Herndon, traffic manager of the Cincinnati Chamber of Commerce, declared that the Cincinnati rate was now already higher than the proposed increases from eastern points to Cumberland despite the fact that the distances were virtually the same. The proposed increases would put Cincinnati further out of alinement with Cumberland and common points.

R. C. Tuttle, of the Holland (Mich.) Chamber of Commerce, George P. Conn, director of traffic of the Buick Motor Company, Flint, Mich., and Thomas B. Moore, attorney for the Michigan Manufacturers' Association, spoke for Michigan interests. A. P. Mills, representing the Michigan State Farm Bureau, stated that differential rates have thrown Michigan out of line with the state of New York in Atlantic Seaboard competition. He declared that the differential rate was put into effect in Michigan at a time when the railroads were not in need of the additional revenue which it created, and that as a result industry generally throughout the state has been taxed unfairly.

Representatives of West Virginia commercial interests voiced a demand for the consolidation of eastern trunk line and central freight association territory, to simplify the problem of rate making.

L. F. Orr, speaking for the Kentucky Railroad Commission, compared various scales applicable to shipments to and from Kentucky, tending to show that they were generally unfair to Kentucky. He submitted a scale embodying ideas which the Kentucky Commission proposed should be applied to official territory.

W. F. Ehman, from the Wisconsin Railroad Commission, and speaking for Wisconsin interests, proposed a new schedule of rates containing not less than 20 classes as a substitute for the present rate structure in official classification territory. The additional class rates suggested would eliminate a number of the commodity rates now in effect.

F. D. Campeau, general counsel for the Michigan Furniture Manufacturers' Association, declared that furniture manufacturing interests centered at Grand Rapids, Mich., are out of line with competitors in adjoining territories and for this reason object to the carriers' proposal for increases in the class rates under which furniture is moved. At present rates it is impossible for Michigan manufacturers to compete with New York manufacturers for New York City and Atlantic seaboard business. The carriers' proposed increase would only add to the advantage already held by the eastern shippers. Although the furniture business in this district has been greater than last year, the increased production costs and the higher amount paid for labor have more than absorbed the extra profits. Supporting testimony was given by W. A. Bowen, a furniture manufacturer of Grand Rapids, and also by John D. Carroll, secretary-treasurer of the Michigan Chair Company.

Commission and Court News

Interstate Commerce Commission

The Interstate Commerce Commission has ordered cancelled tariff schedules providing for increased rates on clean rice between points in southern territory, which it has found unjustified, without prejudice to the establishment of rates on the basis indicated in the report.

Grain Rates from Kansas City Approved

The Interstate Commerce Commission has dismissed a complaint filed by the Board of Trade of Kansas City which had attacked the proportional rates on grain and grain products from Kansas City, Mo., to destinations in North Carolina, and other southern states, as unduly prejudicial to Kansas City and unduly preferential of Omaha, Sioux City, Des Moines, St. Paul and Cairo. The commission found the rates not unreasonable or otherwise unlawful. But in a separate case, combined with this complaint, the commission found not justified rates proposed by the railroads on grain and grain products from points in Colorado, Kansas, Nebraska and Missouri to the Ohio river, lower Mississippi river crossings and other points in the Mississippi Valley, which had been suspended.

Court News

Ascertainment of Demurrage Charges

The Circuit Court of Appeals, Fourth Circuit, holds that where under agreement with a coal exchange cars, for purpose of demurrage charges, were treated as having arrived on the exchange's receipt of notices of arrival, and through a mistake of the railroad's employees no notices of arrival were sent for 880 cars, the railroad could not recover from a shipper, a member of the exchange, its share of demurrage charges, being unable to show what sum, if any, the shipper owed, and the railroad could not assume that there had been neither free time nor demurrage upon any of the 880 cars.—Virginian v. Lake & Export Coal Corp., 5 Fed. (2d) 496.

Contributory Negligence of Passenger in Alighting

A passenger who fell asleep in a day coach at night awoke after the train started from the station of his destination. A brakeman stopped the train for him, opened the vestibule doors and then went inside to signal. The passenger went to the lowest step, and when the train stopped reached for the ground with his foot, when the train started, throwing him off, and he fell through a trestle. He lived in the town and knew the location of the trestle. The Circuit Court of Appeals, Eighth Circuit, holds that there was no invitation to him to alight at that place, and in hastening to do so without waiting until the trainmen could ascertain its safety, he was contributorily negligent.—Chicago, M. & St. P. v. Youngers, 5 Fed. (2d) 784.

Negligence Must Be Shown in Actions Under Federal Employers' Liability Act

In an action under the federal Employers' Liability Act for the death of a brakeman, it appeared that he was last seen alive before leaving the engine (at night) and his mutilated body was found between the main track and siding. There was no evidence tending to show how the accident happened. The only way conceivable involving negligence of the railroad company was lack of ballast between the main track and the siding. The Circuit Court of Appeals, Third Circuit, did not concede that lack of ballast in such a place constituted negligence, but said that, assuming that it did, there was no evidence that deceased was thrown under the train because of lack of ballast.—Reading Co. v. Boyer, 6 Fed. (2d) 185.

Labor News

A. C. L. Telegraphers Ballot

Members of the Order of Railroad Telegraphers, embracing station agents and telegraph and tower service employees on the Atlantic Coast Line, have voted almost unanimously for a strike, according to a report received before the completion of the balloting. The vote followed a dispute between the employees, the railroad and the Labor Board on requests for the revision of rules governing working conditions and an increase in the rates of pay of approximately seven cents an hour. When no agreement was reached following conferences between the management and the employees' committee, the matter was referred to the board in April. In its decision of June 26 the board denied the request for 15 days' vacation with pay and remanded the question of increases in wages for further conferences between the management and the employees' committee. Following conferences from August 5 to 24, the road offered an adjustment in rates of pay for 252 positions out of a total of 1,184. This the committee declined. A conference was held on September 16, but the committee and the management came to no agreement.

Train Dispatchers Appeal to Board

The American Train Dispatchers' Association has made ex-parte submissions to the Railroad Labor Board asking for the restoration of vacations with pay and revision of rules on a number of roads. Dispatchers on the Missouri-Kansas-Texas ask for two weeks' annual vacation or, in lieu thereof, rates of pay comparable with those paid on contiguous lines; also that the time consumed in making transfers be counted as overtime, and for other changes.

The dispatchers of the Hocking Valley ask for the restoration of annual vacations with pay or the addition of a day's pay to the monthly rate in lieu thereof; also for the re-establishment of sick leave with pay and for the inclusion of the position of chief train dispatcher in the provisions of the agreement of February 25, 1924.

The dispatchers of the Louisiana & Arkansas request the inclusion of chief dispatcher within the scope of the agreement, that chief dispatchers be paid for all overtime, rest days and holidays worked since February 5, 1924. Other points call for increased rates of pay for chief, trick, relief and extra dispatchers.

Other roads whose dispatchers are asking for vacations with pay and changes in rules are the Louisiana & Arkansas, the Texas & Pacific, the Baltimore & Ohio, and the Denver & Rio Grande Western.

C. N. R. Adjustment Board Organized

Organization of the board of adjustment on the Canadian National, which is to deal with individual grievances of clerical, station, shop, shed and other employees that cannot be otherwise adjusted, was completed at a meeting in Montreal last week. The four members of the Board appointed by the management of the railways are: D. Turney, general manager's office, Toronto; H. Morton, general manager's office, Moncton, N. B.; W. A. Kirkpatrick, superintendent of transportation, Saskatoon, Sask.; and J. F. Aichison, assistant comptroller, central region, Toronto. The representatives nominated by the employees are: A. R. Mosher, president, and M. M. Maclean, secretary, Canadian Brotherhood of Railroad Employees, both of Ottawa; C. H. Minchin, Calgary, and N. L. Preston, Winnipeg. J. F. Aichison, Toronto, was appointed chairman, and A. R. Mosher, Ottawa, vice-chairman. Meetings will be held on the third Tuesday of every third month. The new board will function in a manner similar to that of Board of Adjustment No. 1, which has operated for some years in adjusting individual grievances of conductors, engineers, firemen, trainmen, telegraphers and maintenance-of-way employees, and with representation thereon from all Canadian railways.

THE SOUTHERN PACIFIC has changed the name of its Ogden-San Francisco line from the American Canyon Route to the Lake Tahoe Route, coincident with the starting of the reconstruction of the line from Truckee, Cal., to Lake Tahoe.

Foreign Railway News

Confusion at End of Daylight Saving Causes Collision

A collision occasioned by confusion or error, incident to changing the clocks at the end of summer, is reported from France. On the night of October 3, an express train from Paris to Strasbourg, moving at high speed, collided with a freight train, killing one engineman and one guard. The freight train was running by the old timetable and the express train by the new one.

Progress of Argentine State Railways

The function of the Argentine State Railways lies in their encouragement to industry and commerce in the regions farthest from the great centers of population—the central, western, and northwestern districts of Argentina, says the Times (London). They make the life of man possible in those places where nature shows herself most hostile. The first object of the State Railways is to bring immense fertile regions into communication with the home markets and the ports. Immediate profits are not expected, rather the general interests of the country are considered.

The systems under state control in 1924 were as follows:

(1) The Argentine Central Northern.—4,916 kilometers of narrow gage track, with 237 stations; equivalent to one station per 21 kilometers.

(2) Formosa to Kilometer 297.—299 kilometers of narrow gage track, with 12 stations; one station per 25 kilometers of track.

(3) Diamante to Federal.—167 kilometers of middle gage track, with 11 stations; equivalent to one station per 15 kilometers.

(4) San Antonio to Kilometer 448.—452 kilometers of wide gage track, with 21 stations; one station per 22 kilometers.

(5) Comodoro Rivadavia to Colonia Sarmiento.—200 kilometers of track (wide gage), with ten stations; one station per 20 kilometers of track.

(6) Puerto Deseado to Colonia Las Heras.—284 kilometers of wide gage track, with 14 stations; one station per 20 kilometers.

The operations of the lines for the past two years shows the following returns:

	£ Sterling
1923	3,716,761
1924	4,062,174

The construction of new lines has been proceeded with as fast as the funds allocated to the purpose would permit. On the International line from the Province of Salta to the Republic of Chile the constructional works were limited to Abrade Chorillos, situated at 200 kilometers from Rosario de Lerma, the terminus of the line. A feature of the work performed on this line is the difficult and costly construction of tunnels and viaducts. Some of these undertakings have been completed and others have reached an advanced stage. The section extending to Puerta de Tastil is now open to public service. On the International line to Bolivia, from Embarcación to Yacuiba, work was proceeded with until that part of the line from Embarcación to Tartagal (88 kms.) could be opened provisionally. Construction of the line from Metan to Barranqueras (linking up the northern provinces with the River Paraná) has been extended 1,109 kilometers from Santa Fé.

The branch line from Rosario de la Frontera to Antilla, measuring 61 kilometers, was opened to public service during 1924. Construction of the line from Catamarca to Tucumán, which would encourage direct intercourse between the northern and central provinces and the western provinces of the republic, was carried as far as Amadores, and opened to public service. On the branch line from La Banda to Santiago del Estero the construction of the combined railway and highway bridge over the River Dulce is making progress. It is a work of great magnitude and public importance. Work on the branch line from San Juan to Jachal has been progressing slowly, the section Coll-Albardon, a distance of 23 kilometers, having been opened to public service.

In the Argentine Mesopotamia, the construction of the line from Federal to Curuzu Cuatia continues, the permanent way having been completed last year. It is proposed to finish the laying of the tracks and to make use of the line as speedily as possible. Locomotives and cars have already been purchased. The great wide-gage line which will connect Carmen de Patagones with Lake Nahuel Huapi is already opened to public service from the town of Viedma to a point barely 80 kilometers from Bariloche, a village situated on the shores of the great lake. Possibly by the end of the year the line will reach Bariloche.

On the line from Puerto Madryn to Colonia 16 de Octubre, which belongs to the system of light railways, work has reached its destination, 240 kilometers, from Port Madryn. The branch line from Trelew to Rawson and Playa Union is already in use.

Among new projects, the plans for a line from Perico to Rio Bermejo, and the new route between the stations Leon and Volcan, on the line to La Quiaca, have been completed. The system will soon be linked up with that of the Bolivian railways, thus creating a new international link across the South American Continent. The surveys of other projected lines have been completed.

Improvements on the lines already in use include extensive re-ballasting, the renewal of old bridges from Tucumán northwards, the construction of locomotive sheds, and new sidings at stations. The construction of general cargo sheds and of cereal sheds in the agricultural zones of the State Railways has also been carried out, together with improvement of the signalling system, the construction of dwelling houses for employees, the solution of the water problem in certain area, and the erection of petroleum tanks.

The extensive system of the Argentine Central Northern Railway embraces all the northern, central, and western area of the republic, traversing numerous provinces and an appreciable portion of the territories of the Chaco and Formosa. The initial returns vary according to the nature of the districts served by the system. In the central and northwestern areas the state lines carry their tracks through the Córdoba Hills and the valleys of the mountains of Tucumán, Salta, and Jujuy. On these routes the yearly increase of both passenger and freight traffic is surprising. The constant efforts made by the administration of the State Railways to improve their services have resulted in great increases in commercial traffic in the provinces of the west, San Juan, La Rioja, and Catamarca, and on the Chaco line. The Patagonian Railways give important service in gathering products (principally wool and hides) from the central valleys of a vast expanse of national territory. These are all wide-gage tracks, with the exception of the line from Puerto Madryn to Colonia 16 de Octubre, a light railway of 0.75-meter gage. The wide-gage line from Viedma to Bariloche gives access to the zone of the great National Southern Park, spreading over one of the choicest districts in the country, and including the forestal environs of Lake Nahuel Huapi. This region is bordered by lofty mountains and crossed by numerous rivers and streams.

Miscellaneous Notes

The following reports have been received by the Bureau of Foreign and Domestic Commerce from its agents in various parts of the world.

Polish State Railway equipment must be purchased at home whenever possible. German manufacturers are excluded from purchases which must be made abroad.

The Chilean State Railways will float a $45,000,000 conversion loan if the approval of the Minister of Finance can be obtained. Approximately $6,000,000 of the loan will be used in taking up previous issues, while the remainder will be used for improvement and betterment work, including, possibly, the electrification of the Port of San Antonio Line.

French railway receipts increased 500,000 francs during the period January 1 to July 15, 1925, compared with the same period of 1924.

Czechoslovakia has taken over 48 local Bohemian railway lines, under a law passed June 25, the provisions of which authorized the government to take over and operate the local railways formerly owned by municipalities, towns and private companies in Bohemia, because of the deficits resulting from their operation.

Equipment and Supplies

Locomotives

THE MISSOURI PACIFIC has authorized the purchase of 10 Santa Fe type locomotives.

THE JEFFREY MANUFACTURING COMPANY, Columbus, Ohio, is inquiring for one electric locomotive.

THE CENTRAL SAN ANTONIO (Cuba) has ordered one consolidation locomotive from the Baldwin Locomotive Works.

THE CENTRAL CUBA SUGAR COMPANY (Cuba) has ordered 3 Mogul type locomotives from the Baldwin Locomotive Works.

THE IQUIQUE PINTADOS RAILWAY (Chile) is inquiring through the locomotive builders for 5, 2-8-8-2 Mallet type locomotives, 16 Santa Fe type and 20 Mikado type locomotives.

THE LONG ISLAND has ordered from the Ingersoll-Rand Company, the General Electric Company and the American Locomotive Company—these companies co-operate in its manufacture—one 100-ton, 600 h.p. oil-electric switching locomotive to be equipped with two, 300 h.p. Ingersoll-Rand oil engines connected to two, TDC-6-200 kw. generators, the motive power consisting of four GE-69-C railway motors mounted on each of four axles which are mounted on each of two trucks. The locomotive is to be placed in service in the near future at the Bushwick terminal. This is the second oil-electric locomotive to be bought by a railroad in this country; a previous order was reported in the *Railway Age* of October 3.

Freight Cars

INTERNATIONAL-GREAT NORTHERN.—See Missouri Pacific.

ARMOUR & CO. is inquiring for 50 steel underframes for tank cars.

THE ATLANTIC COAST LINE is inquiring for 500 gondola cars of 50 tons' capacity.

THE NATIONAL TUBE COMPANY is inquiring for 50 hopper car bodies of 70 tons' capacity.

THE KANSAS CITY, MEXICO & ORIENT is inquiring for 50 single-sheathed automobile box cars.

THE UNITED ALLOY STEEL CORPORATION is inquiring for 15 gondola cars of 50 tons' capacity.

THE CANADIAN PACIFIC has ordered 100 ballast cars from the Canadian Car & Foundry Company.

THE WABASH has ordered 12 automobile box cars from the American Car & Foundry Company.

THE KIAOCHOW TSINAN RAILWAY (China) is inquiring through the car builders for 80 all steel box cars of 40 tons' capacity.

THE TIDAL REFINING COMPANY, Tulsa, Okla., has ordered 125 tank cars of 40 tons' and 8,000 gal. capacity from the American Car & Foundry Company.

THE INDIAN STATE RAILWAYS are inquiring through the car builders for 5,634, four-wheel broad gage wagons and 910 four-wheel meter gage wagons.

THE MISSOURI PACIFIC has authorized the purchase of 2,000 box, automobile, stock and coal cars; and 1,000 box and automobile cars for the International-Great Northern.

THE LOUISVILLE & NASHVILLE has increased its order from 500 to 1,500 gondola cars placed with the Pressed Steel Car Company and reported in the *Railway Age* of September 26.

THE CHESAPEAKE & OHIO has given a contract to the Hocking Valley Company for building 25, 8-wheel, steel underframe caboose cars at Logan, Ohio, for the Hocking Valley Railway.

THE MONTOUR RAILROAD has ordered 500 hopper cars of 55 tons' capacity from the Standard Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of October 3.

THE CHILE EXPLORATION COMPANY has ordered 100 ore cars of 70 tons' capacity from the Pressed Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of September 26.

THE ST. LOUIS-SAN FRANCISCO is inquiring for 500 composite gondola cars of 55 tons' capacity and 500 automobile box cars of 50 tons' capacity. This company has also an inquiry for 3,000 box cars as was reported in the *Railway Age* of September 19.

Passenger Cars

THE MISSOURI PACIFIC has authorized the purchase of 5 steel dining cars.

THE MISSOURI PACIFIC has ordered 15 steel baggage cars from the American Car & Foundry Company.

THE CHICAGO, SOUTH SHORE & SOUTH BEND has ordered 15 combination smoking and passenger cars and 10 combination passenger, baggage and smoking cars from the Pullman Car & Manufacturing Corporation. Inquiry for this equipment was reported in the *Railway Age* of September 12.

Iron and Steel

THE ERIE expects to enter the market for 30,000 tons of rail.

THE SOUTHERN PACIFIC is inquiring for 1,200 tons of track spikes.

FREIGHT CARS ORDERED, INSTALLED AND RETIRED

Month—1924	Domestic orders reported during month	Installed during month	Aggregate capacity tons	Retired during month	Aggregate capacity tons	Owned at end of month	Aggregate capacity tons	On order as of first of following month	Building in R. R. shops
July	533	16,583	1,151,302	8,413	316,927	2,322,968	102,388,652	51,156	4,602
August	4,751	15,452	785,288	8,834	333,173	2,329,582	102,845,800	40,961	3,618
September	22,520	15,455	779,078	9,337	370,607	2,336,147	103,270,000	47,553	3,045
October	11,653	16,598	834,762	10,504	*418,816	2,342,149	103,688,000	[1]38,403	[2]3,574
November	13,038	11,705	579,234	10,678	463,970	2,342,479	103,767,000	42,765	5,159
December	9,526	6,763	311,254	11,918	488,035	2,337,229	103,585,000	54,202	6,478
January, 1925	10,312	11,768	551,263	7,867	326,812	2,341,109	103,812,974	58,910	5,285
February	5,388	15,024	721,867	9,453	365,111	2,346,687	104,169,525	50,603	4,878
March	4,677	16,007	753,947	12,067	474,644	2,350,697	104,454,128	45,419	5,572
April	5,525	13,749	652,462	10,497	423,322	2,353,956	104,683,798	42,602	8,072
May	8,944	12,982	612,607	8,658	335,401	2,356,641	104,902,235	35,823	9,042
June	777	12,191	590,657	9,797	365,589	2,359,040	105,127,861	27,458	8,633
July	843	10,542	504,185	10,051	384,084	2,361,551	105,350,472	26,087	8,189
August	2,816	11,554	564,681	9,259	364,487	2,363,849	105,550,765	20,151	6,440
September	6,113	.....	.....	.....	.....	.....	.....	.....	.....
Total for 8 months	.....	103,817	.....	.....	.....	.....	.....	.....	.....
Total for 9 months	45,395	.....	.....	.....	.....	.....	.....	.....	.....

*Corrected figure.

[1]Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops but not rebuilt equipment.

[2]Figures as to installations and retirements prepared by Car Service Division A. R. A. Figures cover only those roads reporting to the Car Service Division. They include equipment received from builders and railroad shops. Figures of installations and retirements alike include also equipment rebuilt to an extent sufficiently so that under the accounting rules it must be retired and entered in the equipment statement as new equipment. The figures as to orders as given in the first column of table are not comparable with figures relating to installations given in succeeding columns.

THE DELAWARE & HUDSON has ordered 100 tons of steel from the Bethlehem Steel Company for bridge work.

THE BOSTON & ALBANY has bought 300 tons of steel from the Palmer Steel Company for station sheds at Springfield, Mass.

THE TEXAS & PACIFIC has ordered 123 tons of structural steel for a bridge on the Fort Worth division from the American Bridge Company.

THE NEW YORK CENTRAL has ordered 290 tons of structural steel for a station building at Youngstown, Ohio, from the McClintic-Marshall Company.

THE CHICAGO & WESTERN INDIANA has ordered 225 tons of structural steel, for canopies at Dearborn station, Chicago, from the American Bridge Company.

THE GREAT NORTHERN has ordered 2,105 tons of structural steel from the American Bridge Company and 465 tons from the Wisconsin Bridge & Iron Company.

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon October 21, for its requirements of open hearth steel rail, with angle bars, for delivery during 1926.

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS has ordered 240 tons of structural steel from the McClintic-Marshall Company, and 190 tons from the Bethlehem Steel Company.

THE UNION PACIFIC has ordered 182 tons of structural steel for train sheds and an umbrella shed on the Oregon Short Line at Salt Lake City, Utah, from the Structural Steel & Foundry Company.

Recent Large Rail Orders

The railroads are now making inquiries and placing orders for their requirements of rail during 1926. Orders were placed recently as follows:

Illinois Central, 28,000 tons, Tennessee Coal, Iron & Railroad Co.
Illinois Central, 32,000 tons, Illinois Steel Company.
Chicago & North Western, 25,000 tons, Illinois Steel Company.
Union Pacific, 18,000 tons, Illinois Steel Company.

The Atchison, Topeka & Santa Fe is expected to enter the market soon for 100,000 tons of rail and the Chesapeake & Ohio for about 30,000 tons. In addition the New York Central is now inquiring for rail and the Pennsylvania will probably come in the market soon for its requirements.

Machinery and Tools

THE WABASH is inquiring for two 25-ton overhead cranes for use at Decatur, Ill.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered a 90-in. locomotive axle and journal turning lathe from the Niles-Bement-Pond Company.

THE CENTRAL OF NEW JERSEY has ordered a 6-ft. radial drill, a combination journal turning and axle lathe and a 48-in. car wheel borer from the Niles-Bement-Pond Company.

THE KENTUCKY & INDIANA TERMINAL has ordered from the Niles-Bement-Pond Company the following tools: A 90-in. driving wheel lathe; 48-in. car wheel borer; 1100-lb. steam hammer; 96-in. 600-ton wheel press; 5-ft. radial drill and a combination journal turning and axle lathe.

Track Specialties

THE LOUISVILLE & NASHVILLE is asking for prices on from 3,000 to 4,000 tons of angle bars and from 2,500 to 3,000 tons of spikes and bolts.

Signaling

THE SOUTHERN PACIFIC has ordered from the Union Switch & Signal Company 120 semaphore signals, style B, to be installed on the new Natron cut-off in Oregon.

Supply Trade News

The Southern Wheel Company, Pittsburgh, Pa., is contemplating the construction of a plant in St. Louis, Mo.

The Kuhlman Electric Company, Bay City, Mich., has appointed the **D. H. Braymer Equipment Company,** Omaha, Neb., its representative in Iowa and Nebraska.

The West Disinfecting Company has removed its executive, sales, purchasing and advertising departments from 411 Fifth avenue, New York City, to its new building at Barn street, Long Island City.

A. A. Helwig, superintendent car department of the Kansas City Terminal, has joined the sales organization of the **Bradford Corporation,** New York. Mr. Helwig will have his headquarters at St. Louis, Mo.

C. W. Owsley has been appointed district manager, railway department, at New York, of the **E. I. DuPont de Nemours & Co., Inc.,** in the paint and varnish division, specializing in the Duco products. Mr. Owsley was born on April 12, 1880, at New Maysville, Ind., and attended the high school at Thorntown, Ind. He served in Cuba during the Spanish-American war. Between 1900 and 1905 he held various positions on the Illinois Central first as car repair man at the Burnside shops, Chicago, and later he became chief clerk to the general foreman in the car department. In 1905 he was requisition clerk in the mechanical department of the San Pedro, Los Angeles & Salt Lake while that road was being built. In the spring of 1906 he became master car builder for the Texas Company at Port Arthur, Tex., the company at that time having only 18 cars which number has since increased to 5,000 or 6,000 cars. From 1920 to February, 1925, Mr. Owsley served as superintendent of the railway traffic and sales department for the same company.

C. W. Owsley

Glenn H. Eddy has severed his connection with the Link-Belt Company, Chicago, to become associated with the **Ohio Brass Company,** Mansfield, Ohio, as assistant to secretary H. L. Brown. Mr. Eddy will direct the advertising for this company.

Ward G. Day, for the past seven years in charge of the service department of **Fairmont Railway Motors, Inc.,** at Fairmont, Minn., has been promoted to special agent, with headquarters at New Orleans, La. Mr. Day's jurisdiction will cover the states of Texas, Louisiana, Mississippi, Alabama, Arkansas, Georgia and Florida. **Carl Brhel** has succeeded Mr. Day at Fairmont.

E. Thomann, managing director of the railroad department of **Brown, Boveri & Company, Ltd.,** of Baden, Switzerland, and **A. Buchli,** executive director of the **Swiss Locomotive Works,** at Winterthur, affiliated with the former company, have arrived in this company to inspect various systems of railroad electrification in operation here. The Brown Boveri Company expects soon to enter actively into the manufacture in America of electrical equipment, including electric locomotives, through an American company now in process of organization.

John W. Lowell, assistant manager of the service bureau of the Universal Portland Cement Company, Chicago, has resigned to become vice-president of **Benedict Stone, Inc.,** Chicago. Mr. Lowell is a graduate of civil engineering from the University of Wisconsin and previous to joining the service bureau of the Universal Portland Cement Company he was employed in engineering capacities by the U. S. Geological Survey, by Bion J. Arnold, as a designer on the Chicago Subway Commission, by Isham Randolph, on hydraulic work, and by the Illinois Central as a designer in the bridge department.

William S. Miller has been appointed manager of the newly formed railway equipment department of the **Parsons Company,** with headquarters in Newton, Ia. He was born in San Francisco, Cal., on May 17, 1888, and graduated from Leland Stanford University with the degree of civil engineer in 1911. Upon leaving school he entered the employ of Stone & Webster as a rodman and instrumentman on hydro-electrical construction in Washington. From 1912 to 1917 he was employed by the Senn-Smith Company, Los Angeles, Cal., manufacturers of mining equipment, as manager. In the latter year he was appointed eastern sales manager for the Lakewood Engineering Company, Cleveland, Ohio. Later he became central division manager of the George W. Goethals Company, Cleveland, which position he left in 1924 to undertake special engineering investigations. On April 1, 1925, he entered the employ of the Parsons Company where he is in charge of the sale of their cast steel wheels for railway motor cars and the Woolery weed burner.

W. S. Miller

Paul Llewellyn, vice-president of the Interstate Iron & Steel Company, Chicago, and vice-president and treasurer of the Chicago Malleable Castings Company, Chicago, has been elected president of the **Interstate Iron & Steel Company,** to succeed Silas J. Llewellyn, deceased. Paul Llewellyn was born in 1886 in Milwaukee, Wis., and was educated at Yale University. In 1908 he entered the employ of the Interstate Iron & Steel Company at Cambridge, Ohio, and in 1910 was promoted to manager of the Cambridge works, which position he held until 1912, when he was made assistant manager of the East Chicago, Ind., works. He held the latter position until 1914, when he was promoted to manager of the East Chicago works. In 1916 he was also appointed manager of the South Chicago, Ill., works. He entered the army in 1918 as a captain in the chemical warfare service and was later promoted to major. In 1919 he entered the sales department of the Interstate Iron & Steel Company in Chicago and in 1921 was promoted to sales manager and made a vice-president, which position he has held until his election as president.

Paul Llewellyn

James S. Hearons, sales representative of the **Gustin-Bacon Manufacturing Company,** Kansas City, Mo., has been promoted to district manager, with headquarters at 1220 Steger building, Chicago. He was born in Friendship, N. Y., and was educated in the public and high schools at Hornell, N. Y. He entered railway service with the Erie as a special apprentice at Hornell and later became foreman of the fitting shop. He resigned from this position to become roundhouse foreman of the Illinois Central at Memphis, Tenn., and was later appointed roundhouse foreman on the Yazoo & Mississippi Valley, a subsidiary of the Illinois Central, with headquarters at Vicksburg, Miss. In August, 1914, he entered the supply business in St. Louis, Mo., and in 1917 entered the army. In July, 1919, he returned from France and was mustered out as a captain of the Forty-Ninth Engineers. He then entered the employ of the Gustin-Bacon Manufacturing Company as a sales representative at Kansas City, which position he has held until his recent promotion.

John B. Emerson, engineer of tests of the Rail committee of the Engineering division of the American Railway Association, has been appointed vice-president of **R. H. Laverie & Sons, Inc.,** New York City, and general manager in charge of the middle and southwestern territories, with headquarters in Chicago. R. H. Laverie & Sons, Inc., are the American representative of the Bureau Veritas of France, an international bureau of inspection and tests, and have specialized in commercial inspection work in this country for more than 20 years. With the opening of an office in Chicago, equipped with physical and chemical testing laboratories, this organization will enter more actively in competition for business of this character throughout the country. Mr. Emerson was born at Fond du Lac, Wis., on September 19, 1879, and graduated in chemical engineering from the University of Wisconsin in 1899. He entered the service of the Illinois Steel Company on graduation, remaining with that organization until 1905 when he went with the Mt. Vernon Car Manufacturing Company, Mt. Vernon, Ill., as metallurgist in charge of the car wheel foundry. In 1907 he entered the employ of Robert W. Hunt & Co. as manager of their St. Louis office. In 1917 he entered the Air Service of the United States Army as aeronautical mechanical engineer and after the armistice he was made finance officer in charge of the settlement of claims in the Pittsburgh district. In 1920 he went with the United Alloy Steel Corporation, Canton, Ohio, as engineer of tests, leaving that organization in 1922 to become metallurgical engineer for the Rail committee of the Engineering division of the American Railway Association. A year later he was appointed engineer of tests, which position he has since held. Mr. Emerson will retain his connection with the Rail committee as consulting engineer.

J. B. Emerson

Good Health Profitable All Around.—Doctor M. R. Taylor (quoted at the National Safety Council convention at Cleveland) in discussing the stimulation of production, said: "The modern employer has come to realize that the human machine pays a far larger return on the investment in its upkeep than any piece of iron or steel ever can or will. Physical health is man's greatest asset; and as this is true individually, it must be true collectively; therefore, the capitalizing of it should become a consequential factor in all industries. A well-organized industrial medical department should be as beneficial to the employer as to the employee."

Railway Construction

CENTRAL OF GEORGIA.—This company has awarded a contract to the Roberts & Schaefer Company for two N. & W. type junior electric cinder plants at Albany, Georgia.

CENTRAL PACIFIC.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of a new line from Cornell, Calif., to a connection with the Nevada-California-Oregon at Alturas, Calif., 61 miles.

CENTRAL RAILROAD OF NEW JERSEY.—A contract has been awarded to the Bethlehem Steel Company for the removal of the existing superstructure of Bridge No. 8, Allentown Terminal Railroad, Allentown, Pa., and for the furnishing and erection in its place of a new structural steel superstructure. The cost will be approximately $62,480.

CHICAGO, MILWAUKEE & ST. PAUL.—A contract has been awarded to the Joseph E. Nelson Company for six water-treating plants to be installed at Madison and Egan, S. D., and at Chandler, Fulda, Okabena and Jackson, Minn. Those at Madison and Jackson will have a capacity of 12,000 gal. per hour, and the others will have a capacity of 6,000 gal. per hour. All the tanks will be of wood.

CHICAGO & NORTH WESTERN.—This company and the Litchfield & Madison have filed a joint application with the Interstate Commerce Commission for certificates authorizing the construction of lines to connect the two properties in Madison and Macoupin counties, Ill., 1.05 miles to be built by the Litchfield & Madison and 2.51 miles by the Chicago & North Western.

CHICAGO, ROCK ISLAND & PACIFIC.—This company has awarded a contract to the Roberts & Schaefer Company for two junior cinder plants at Shawnee, Okla.

CHICAGO, ROCK ISLAND & PACIFIC.—This company will soon call for bids for the construction of a brick passenger station 24 by 240 ft., at Tucumcari, N. M.

CHICAGO, ROCK ISLAND & PACIFIC.—This company is asking for bids on the construction of 14 additional stalls for its roundhouse at Silvis, Ill., which, including the lengthening of pits, is estimated to cost $75,000.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—This company has awarded a contract to the Walsh Construction Company, Davenport, Ia., for one mile of second main track work at Bellefontaine, Ohio. A contract has been let to this company for masonry work and excavation for the Dennison avenue grade separation at Columbus, Ohio, at an estimated cost of $85,000. It has let a contract to this company for the grading for the second main track and relocation from Gretna, Ohio, to Quincy. The masonry work has been awarded to the Mead-Balch Construction Company, Indianapolis, Ind. The I. D. Tuttle Company, Springfield, Ohio, was awarded a subcontract for part of the masonry work. The estimated cost of the latter is $1,300,000.

GREAT NORTHERN.—This company is making preliminary surveys to ascertain the feasibility of changing its line in the Cascade mountains to secure a lower grade line.

JACKSONVILLE TERMINAL.—This company has awarded a contract to the Roberts & Schaefer Company for one Standard N. & W. type cinder plant at Jacksonville, Fla.

KANSAS CITY SOUTHERN.—This company is now making a number of improvements to its facilities at Shreveport, La., including a 54-ft. extension to its storehouse and other changes estimated to cost $33,772; the building of 8,412 ft. of main tracks; two 1,200-ft. interchange tracks and 3,108 ft. of industrial spurs to serve a new industrial district on Douglas Island at an estimated cost of $164,625; and a new yard involving the laying of 13 miles of tracks, the raising of the grade of two miles of main track, the installation of a 125-ton track scale, a 20,000-gal. wooden tank and water column, an air line and an electric lighting system, at an estimated cost of $454,000. This company is also installing a 105-ft. twin span turntable at Leesville, La., estimated to cost $38,604. All of this work is being done by company forces except the construction of a bridge over Cross Bayou on the Douglas Island line for which a contract has been let to the Topeka Bridge & Construction Co.

LOS ANGELES & SALT LAKE.—This company is installing a 100-ft. pony truss turntable equipped with an electric tractor at Milford, Utah, at an estimated cost of $44,000, with company forces.

OREGON SHORT LINE.—A contract has been awarded to H. W. Bauv Company, Salt Lake City, Utah, for the construction of a restaurant building at West Yellowstone, Mont., estimated to cost $86,000.

OREGON SHORT LINE.—This company is constructing a corrugated iron and frame lumber shed, 50 by 405 ft., at Pocatello, Idaho, estimated to cost $56,000. It is also constructing a train shed, 172 by 25 ft., including umbrella sheds at Salt Lake City, Utah, at an estimated cost of $77,000. The work is being done by company forces.

OREGON-WASHINGTON.—A contract has been awarded to W. C. Kelley, La Grange, Ore., for the construction of a frame and galvanized iron storehouse and a repair track store and waste house at Huntington, Ore., estimated to cost $31,000. This company has awarded a contract to Edward J. Barrett for the construction of a one-story brick commissary building with wooden platforms at Portland, Ore., estimated to cost $28,000.

PENNSYLVANIA.—A contract has been awarded to the T. J. Foley Company, Pittsburgh, Pa., for grading and masonry in connection with an under grade bridge to eliminate the grade crossing at Dennison avenue, Columbus, Ohio, to cost $350,000. A contract has also been awarded to Booth & Flynn, Ltd., Pittsburgh, Pa., for grading, paving and curbing of the relocated Grant street, Pittsburgh, Pa., to cost $80,000. The work is to be done in connection with terminal improvements at that point. A contract has been awarded to W. F. Trumble & Sons Company, Pittsburgh, Pa., for the erection of an interlocking tower at New Brighton, Pa., to cost $11,000.

PENNSYLVANIA.—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the construction of a reinforced concrete automatic electric coaling plant at Phillipsburg, N. J.

SACRAMENTO NORTHERN.—This company has applied to the California Railroad Commission for permission to construct a line from Lisbon, Cal., through the Holland reclamation district, for a distance of 13 miles.

SOUTHERN.—Contracts for a number of bridges have been awarded by this company to the Virginia Bridge & Iron Company, masonry and other work to be done by the railroad. The largest of these bridges will be a structure 625 ft. long across the Yadkin river near Idols, N. C. Present masonry walls will be topped with concrete and five 125-ft. riveted truss spans will be placed. A 128-ft. bridge near Shelton, S. C., will be replaced, as will a 169-ft. structure near Montgomery, S. C. Other bridges to be built under these contracts are located as follows: Old Fort, N. C., 131 ft.; Paint Rock, N. C., 50 ft.; Sharon, S. C., 160 ft. with new concrete piers.

UNION PACIFIC.—This company is constructing a 200,000-gal. capacity steel water tank at Hannah, Wyo., estimated to cost $25,000. It is also constructing a 150-ton steel coaling station at Carr, Colo., at an estimated cost of $65,000. The work on both projects is being done by company forces.

UNION PACIFIC.—A contract has been awarded to P. J. Sullivan, Denver, Col., for the construction of a brick storehouse, 40 ft. by 160 ft., at Council Bluffs, Ia., at an estimated cost of $67,000. This company is asking for bids for the construction of a combination wood and stucco passenger and freight station at Cozad, Neb., estimated to cost $37,000. This company has awarded contract to the American Construction Company, Omaha, Neb., for the construction of ten 96-foot stalls as an addition to its brick enginehouse at Marysville, Kan., estimated to cost $96,000.

Railway Financial News

ARKANSAS & LOUISIANA MIDLAND.—*Tentative Valuation.*—The Interstate Commerce Commission has issued a tentative valuation report as of June 30, 1918, in which the final value for rate-making purposes of the common carrier property used is placed at $1,171,799.

ARIZONA EASTERN.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $15,891,000 of 5 per cent first mortgage bonds, to reimburse the treasury for expenditures, to be delivered to the Southern Pacific on a 6 per cent basis.

BLUE RIDGE.—*Final Value.*—The Interstate Commerce Commission has found the final value for rate-making purposes of the common-carrier property owned and used to be $1,816,000, as of June 30, 1916.

BOSTON & MAINE.—*Abandonment.*—Arguments were heard by the Interstate Commerce Commission at Washington on October 2 on this company's application for authority to abandon branch lines in New Hampshire.

BUTTE, ANACONDA & PACIFIC.—*Abandonment.*—The Interstate Commerce Commission has issued a certificate authorizing this company to abandon its Georgetown Extension from Browns, Deer Lodge County, Mont., to Southern Cross, 16.75 miles. The extension was constructed to reach a mining operation since abandoned.

CHICAGO, MILWAUKEE & ST. PAUL.—*Abandonment.*—The receivers have applied to the Interstate Commerce Commission for authority to abandon a 3-mile logging branch from McNamara, Mont., to Douglas.

CHICAGO, MILWAUKEE & ST. PAUL.—*Protective Committee.*—George E. Roosevelt, of Roosevelt & Son, which firm has opposed the plan of the reorganization managers of the St. Paul from the time it was announced, will head a bondholders' protective committee in the preparation of an alternative plan of reorganization, according to an announcement on October 6. The committee's statement said:

"The undersigned have organized as a protective committee; first, to secure a reorganization more equitable to the junior bondholders; second, to oppose the consummation of the proposed Kuhn, Loeb & Co.-National City Co. reorganization plan. This committee is preparing an alternative plan of reorganization which the committee believes will be far more favorable to the bondholders. As compensation for any sacrifice of fixed interest and mortgage position which may be required, we propose, through a participating feature, that the junior bonds be given an opportunity to share in future restoration of earning power. Informal efforts to secure modification of the Kuhn, Loeb & Co. plan have failed. To prevent that plan from being forced on unwilling bondholders, it has become essential to organize effectively and without further delay. The committee offers to serve without compensation. A deposit agreement is in course of preparation, copies of which can be obtained from the secretary, the depositaries, or any member of the committee on and after Thursday, October 8. Bondholders are invited to deposit their bonds."

The committee consists of the following:

George E. Roosevelt, of Roosevelt & Son, chairman; Philip A. Benson, trustee and secretary, Dime Savings Bank of Brooklyn, and chairman of committee on investments of the Savings Bank Association of the State of New York; Charles A. Collins, president, Lynn Institution for Savings, and chairman, Chicago, Milwaukee & St. Paul Railway committee, Savings Banks Association of the State of Massachusetts; Edwin G. Merrill, president, Bank of New York & Trust Co.; Willis D. Wood, Wood, Low & Co. E. T. Gregory, 30 Pine street, New York, is secretary, and Root, Clark, Howland & Ballantine are counsel. The Bank of New York & Trust Co., 52 Wall Street, N. Y., is a depositary. Other depositaries will be announced later.

CHICAGO, ROCK ISLAND & PACIFIC.—*St. Louis Southwestern Notes Cancelled.*—Cancellation of a $7,500,000 note issue of the Chicago, Rock Island & Pacific Railway Company, the proceeds of which were to have been used in connection with the purchase of the St. Louis Southwestern, was announced on October 5 by Speyer & Co., through which the notes had been sold. The bankers issued a statement as follows:

"The Interstate Commerce Commission not having given its approval to the issue and sale by the Chicago, Rock Island & Pacific Railway Company of its $7,500,000 three-year 4½ per cent. notes, to be secured by St. Louis-Southwestern stock, the railway company, in agreement with the bankers, has cancelled the sale of these notes."

The notes in question were secured by the pledge of $13,480,000 preferred stock of the St. Louis Southwestern; the notes were sold to the bankers at 97.75 per cent of par, and resold by them, subject to the approval of the commission.

Charles Hayden, chairman of the board of the Rock Island, has explained that this action does not mean, as some observers believed, that the plans for a Rock Island-Cotton Belt merger have been upset. In a statement issued this week he said:

"Last summer Speyer & Co. purchased an issue of Rock Island notes secured by Cotton Belt stock as collateral which they sold to the public, subject to the Interstate Commerce Commission's approval. The object of the Rock Island in selling them was to save 1 per cent interest on that amount. The Interstate Commerce Commission not having authorized the note issue, the public who purchased them has had its money lying idle without interest, waiting to get the investment which it made last canceled the sale at the request of the bankers.

"We have no comment to make on the delay of the Interstate Commerce Commission in issuing authority for the note issue. There is no connection whatever between this note issue on stock already owned by the Rock Island and the broad question of the approval by the Interstate Commerce Commission of Rock Island's right to acquire control of the Cotton Belt. Rock Island's ownership of its present holdings of stock does not constitute a majority and therefore is not subject to jurisdiction of the commission.

"Application of the Rock Island to acquire control through purchase of further Cotton Belt stock has not yet been heard by the commission and probably will not be until some time in November.

"We are not at all disturbed by the report of the examiner, which in effect amounted only to a recommendation that the present status be preserved. We could not expect the examiner, who is a subordinate of the commission, to overrule the commission's own tentative plan, but we have no reason to doubt that the commission on a full hearing will be convinced that control of the Cotton Belt by the Rock Island is entirely in accord with the public interest."

CRITTENDEN.—*Final Valuation.*—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be $176,680 as of June 30, 1916.

DEATH VALLEY.—*Final Value.*—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be $360,546, as of June 30, 1915.

DETROIT, CARO & SANDUSKY.—*Operation of Line.*—This company has been authorized by the Interstate Commerce Commission to acquire and operate a line from Caro, Tuscola County, Mich., to Roseburg, Sanilac County, about 50 miles. This line was a part of the former Detroit, Bay City & Western, the receiver of which was authorized by the Commission last March to abandon operation. Later it was purchased at foreclosure sale by A. Lawrence Mills and John R. Gray, who will own all the stock of the new company except directors' qualifying shares. Application relating to the issuance of securities is now pending before the Commission.

DULUTH & NORTHEASTERN.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Brevator, Minn., to Brevator Junction, 4 miles.

ELWOOD, ANDERSON & LAPELLE.—*Final Value.*—The Interstate Commerce Commissison has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be $108,910 as of June 30, 1916.

FLORIDA EAST COAST.—*Equipment Trust.*—The Interstate Commerce Commission has granted authority for the issuance of $700,000 4½ per cent equipment trust certificates, series G. The applicant proposed to sell the certificates at 97.125 per cent of par but the commission's authorization requires a price of 97.6984, making the cost to the railway 5 per cent. The certificates mature in equal annual amounts over a period of ten years. The equipment includes 10 Mountain type locomotives and 20 passenger coaches of a total approximate cost of $954,150.

ILLINOIS CENTRAL.—*Preferred Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue $14,218,230 of preferred stock and a like amount of common stock from time to time as may be needed for conversion. The proceeds are to be used in the electrification of the Chicago terminals.

KANSAS CITY SOUTHERN.—*Operation of Line.*—The Interstate Commerce Commission issued a certificate authorizing this company to take over the operation of a line of railroad between Military Junction, Kans., and Baxter Springs, including the joint use of certain terminal facilities, 6.5 miles. This line is being constructed by the Kansas, Oklahoma & Gulf, which company, because of its being in receivership, has found itself unable to operate the extension.

LOUISIANA RAILWAY & NAVIGATION COMPANY.—*Abandonment and Construction of New Line.*—The Interstate Commerce Commission has granted a certificate authorizing this company to abandon its line between Moreauville, La., and Naples, 17.2 miles and to construct a new line from Moreauville to a point on the west bank of the Mississippi river opposite Angola, La., 19 miles. The purpose of the road's plan is to relocate and shorten its route between Shreveport and New Orleans and make possible more expeditious and economical handling of traffic across the Mississippi river. The new line will shorten the route four miles. Ferry service between Naples and Angola will offer better service than is allowed by the present ferry between Moreauville and Angola. A request for permission to retain excess earnings was denied.

MANUFACTURERS' RAILWAY OF ST. LOUIS.—*Tentative Valuation.*—The Interstate Commerce Commission has served a tentative valuation report as of June 30, 1917, in which the final valuation for rate-making purposes of the property owned and used is placed at $1,180,000.

NEW ORLEANS, TEXAS & MEXICO.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $3,000,000 of 5 or 5½ per cent first mortgage gold bonds, to be sold at 93 or 98 and the proceeds to be used in acquiring securities of the San Antonio, Uvalde & Gulf.

NEW YORK, CHICAGO & ST. LOUIS.—*Unification Hearing.*—The hearing on the Nickel Plate unification application was resumed before Commissioner Meyer, of the Interstate Commerce Commission, at Washington on October 7, after the applicant had rested its case on September 30. W. J. Harahan, president of the Chesapeake & Ohio, appeared as a witness at the request of counsel for the protesting minority stockholders of the C. & O., and was questioned in detail as to the basis on which the terms of exchange of new Nickel Plate stock for that of the C. & O., and other details of the Van Sweringen proposal had been arrived at and the reasons which had actuated him in recommending acceptance of the terms to the stockholders and in voting for them as a director. W. A. Colston, counsel for the Nickel Plate, announced that F. D. Underwood, president of the Erie; F. H. Alfred, president of the Pere Marquette, and the C. & O., directors who had voted for the plan who have not heretofore testified, would appear voluntarily, without subpœna, at the request of the protestants, with the exception of J. R. Nutt, of Cleveland, who he said was traveling in the west and could not be reached. Under questions by Thomas B. Gay, for the protestants, Mr. Harahan said that O. P. Van Sweringen had first talked with him about the proposed unification in the summer of 1923, although he had heard something of it before, and that he had discussed the matter, including the proposed terms, with the Van Sweringens and others at various times on the basis of annual reports and other routine reports of the roads involved, but without correspondence or special computations. Mr. Gay pressed him particularly as to the existence of any prepared statements of figures which went into the making up of the ratios of exchange, and he said that none had been preserved. He first learned of the ratios proposed by the Van Sweringens from a New York newspaper of August 8, 1924, and had then made some comparisons of the earnings and other figures for the various roads to satisfy himself that they were fair to the C. & O. before voting for them as a director and recommending them to the stockholders. He said he had considered earning power, value of property and other factors, but would not say what weight had been given to the various factors. He identified several comparisons that had been previously put in the record as the figures on which his conclusion had been based and said that any other figures used, aside from his preliminary examination of the reports, had been pencil figures which had not been preserved. The questions asked were largely argumentative, apparently designed to induce Mr. Harahan to admit that he had recommended the Van Sweringen proposal without adequate knowledge of the details or adequate consideration of the rights of the C. & O. stockholders. Mr. Harahan was also asked many questions as to the various provisions of the proposed lease of the C. & O. to the new Nickel Plate Company and the reasons therefor, particularly as to the reason for the different treatment of the C. & O. stockholders and those of the old Nickel Plate Company, who are not to exchange their stock for new stock. The new stock is to be paid to the Nickel Plate Company, which will also receive new stock for its treasury holdings of C. & O. and Pere Marquette, and the lease provides that in case of a default the Nickel Plate stockholders can get back their property by returning the stock of the new company. Mr. Harahan said he could not recall all of the exact reasons for these various provisions, but that he had satisfied himself that the stockholders of the Chesapeake & Ohio were not prejudiced by them. In reply to a question as to the basis on which he had decided that the proposed terms are fair, Mr. Harahan said he had recently prepared a statement outlining his position. Counsel for the protestants objected to this being read, on the ground that it was a justification prepared long afterward of his action in August, 1924. Commissioner Meyer ruled that it might be read, but Mr. Harahan gave a general answer to the question without reading it.

NEW YORK DOCK.—*Stock.*—The Interstate Commerce Commission has approved the issuance of $3,300 capital stock.

PITTSBURGH & WEST VIRGINIA.—*Operating Contract.*—This company has filed a supplemental application with the Interstate Commerce Commission for authority for the continuance of its control of the West Side Belt by the renewal for an indefinite period of the existing agreement for joint operation of the properties by the Pittsburgh & West Virginia, which became effective as of January 1, 1921, and expires December 31, 1925. The agreement has been previously approved by the commission.

SAVANNAH & ATLANTA.—*Receivers' Certificates.*—The Interstate Commerce Commission has authorized the issuance of an 8 per cent receivers' certificate for $150,000 to retire a certificate of like amount which matured on June 29, 1925.

TAMPA & GULF COAST.—*Bonds.*—The Interstate Commerce Commission has granted this company authority to sell $434,000 first mortgage 5 per cent bonds at not less than 85½ and accrued interest, the proceeds to be applied in payment of indebtedness to the Seaboard Air Line.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—*Control of Subsidiaries.*—The Interstate Commerce Commission has authorized the Terminal Railroad Association of St. Louis to acquire by a 99-year lease the St. Louis Merchants Bridge Terminal, the East St. Louis Connecting and the St. Louis Transfer. The Terminal Association is controlled by 15 proprietary railways which hold in equal amounts all of its outstanding capital stock. Through stock ownership it controls directly or indirectly each of the companies embraced in the St. Louis terminal system. There are involved 81 miles of main track and 248 miles of yard and side track. The purposes of the steps proposed are the securing of economies principally with reference to the elimination of duplicate pay rolls, etc., the elimination of a large amount of accounting work required to separate the operating expenses and revenues of each of the companies at present reporting to the Interstate Commerce Commission. The commission's approval of the lease is conditioned on the filing of an application and appropriate order for authority to assume obligation and liability with respect to the bonds of the subsidiary companies.

Dividends Declared

Akron, Canton & Youngstown (No. 1).—$4, payable October 1 to holders of record September 25.

Atchison, Topeka & Santa Fe.—Common, $1.75, quarterly, payable December 1 to holders of record October 30.

Baltimore & Ohio.—Common, 1¼ per cent, quarterly; preferred, 1 per cent, quarterly, both payable December 1 to holders of record October 18.

Georgia Railroad & Banking.—2½ per cent, quarterly, payable October 15 to holders of record October 2.

Morris & Essex Extension.—2 per cent, payable November 2 to holders of record October 24.

Passaic & Delaware Extension.—2 per cent, payable November 2 to holders of record October 24.

Panama Railroad.—5 per cent.

Syracuse, Binghamton & New York.—3 per cent, quarterly, payable November 2 to holders of record October 24.

Utica, Chenango & Susquehanna Valley.—3 per cent, payable November 2 to holders of record October 14.

Wabash.—Preferred A, $1.25, quarterly, payable November 5 to holders of record October 25.

Trend of Railway Stock and Bond Prices

	Oct. 6	Last Week	Last Year
Average price of 20 representative railway stocks	86.08	87.61	69.53
Average price of 20 representative railway bonds	91.61	91.82	87.98

Railway Officers

Financial, Legal and Accounting

C. J. Hellerstedt, assistant secretary of the Southern Pacific of Mexico, with headquarters at Tucson, Ariz., has been promoted to treasurer, with the same headquarters.

Operating

M. H. Gold has been appointed superintendent of the East Florida division of the Seaboard Air Line, with headquarters at West Palm Beach, Fla.

C. F. Wynne has been appointed chief dispatcher of the Union Pacific, with headquarters at Salina, Kan., to succeed **W. O. Horne,** who has been transferred as night dispatcher at Kansas City, Mo.

Frank R. Pechin, general superintendent of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn., has been promoted to general manager to succeed J. J. O'Neil, retired. Mr. Pechin was born on July 29, 1857, in Chester county, Pa., and was educated in the public schools and at Downington Academy. He entered railway service on July 20, 1880, as a brakeman on the Chicago & North Western and later became a conductor. On December 20, 1889, he entered the employ of the Louisville Southern as a conductor, which position he held until December 23, 1890, when he returned to the Chicago & North Western in the same capacity. From June, 1897, to June, 1898, he was an inspector of passenger service and on the latter date was promoted to trainmaster, with headquarters in Chicago, which position he held until May, 1899. He was then promoted to assistant superintendent, with the same headquarters, which position he held until February, 1902, when he was made superintendent of the Wisconsin and Milwaukee divisions. He held the latter position until December, 1908, when he was promoted to general superintendent of the Chicago, St. Paul, Minneapolis & Omaha, which position he has held until his recent promotion.

F. R. Pechin

J. P. Carter has been appointed trainmaster of the Seaboard Air Line, with headquarters at West Palm Beach, Fla., and **J. P. Mitchell** has been appointed chief dispatcher, with headquarters at West Palm Beach, Fla.

J. A. Small, superintendent of the Southern Pacific of Mexico, with headquarters at Mazatlan, Sinaloa, Mexico, has been promoted to general manager, with the same headquarters.

L. B. Burns, who has been appointed assistant to the vice-president in charge of operation of the Seaboard Air Line, with headquarters at Norfolk, Va., was born on February 17, 1882, in Grenada county, Mississippi, and was educated in high school at Brooksville, Fla. He entered railway service in July, 1900, and until 1903 he was a brakeman on the Atlantic Coast Line. From 1903 to July, 1907, he was a conductor on the same road, and from July 17, 1907, to 1912 he was a conductor on the Seaboard Air Line. In 1912, he became general yardmaster for the same road, and in November, 1914, became trainmaster. On September 1, 1918, he was promoted to superintendent, with headquarters at Tampa, Fla., and in 1925, was promoted to general superintendent, with the same headquarters, which position he held until his recent appointment to assistant to the vice-president in charge of operation

S. J. Clark has been appointed terminal trainmaster of the Seaboard Air Line in charge of the Wildwood, Fla., terminals with jurisdiction also over the Orlando branch. **A. B. Woodward** has been appointed acting assistant trainmaster of the Alabama division, with headquarters at Richland, Ga. **E. R. McMullen** has been appointed assistant trainmaster of the Florida division, with headquarters at Tampa, Fla., succeeding **J. B. Fry,** resigned.

G. E. Bonner, superintendent of the Northern Iowa division of the Chicago & North Western, with headquarters at Eagle Grove, Ia., has been appointed superintendent of the newly formed Northern Iowa division, through the consolidation of the Northern Iowa division and the Iowa and Minnesota division, with headquarters at Mason City, Ia. **R. F. Armstrong,** superintendent of the Iowa and Minnesota division, with headquarters at Mason City, has retired. **J. S. Rice,** superintendent of the Northern Wisconsin division, with headquarters at Fond du Lac, Wis., has been appointed superintendent of the newly formed Lake Shore division, through the consolidation of the Northern Wisconsin division and the Lake Shore division, with headquarters at Green Bay, Wis. **A. N. LeCombe,** superintendent of the Lake Shore division, with headquarters at Green Bay, Wis., has been appointed assistant to the general superintendent, with headquarters in Chicago.

Traffic

P. J. Tierney has been appointed assistant general freight agent of the Chesapeake & Ohio.

D. T. Hayles has been appointed general agent of the Mississippi Central, with headquarters at Natchez, Miss.

E. C. Worthley has been appointed general agent of the Kansas City Southern, with headquarters at Minneapolis, Minn.

H. B. Church has been appointed traffic agent of the Boston & Maine at St. Louis, Mo. This is a new agency; office 1023 Pierce Building.

J. D. Youman has been appointed assistant general freight agent of the Alabama & Vicksburg, with headquarters at New Orleans, La.

A. B. Kelley has been appointed freight service agent for the Central of Georgia, with headquarters in the Stovall building, Tampa, Fla.

H. F. Starke has been appointed general agent of the Southern Pacific Lines, with headquarters in the Park building, Pittsburgh, Pa., succeeding **G. G. Herring,** who has retired on pension.

E. F. L. Sturdee, general passenger agent for the Canadian Pacific in the Orient, with headquarters at Hong-Kong, has been appointed assistant general passenger agent, with headquarters at Montreal. Mr. Sturdee was obliged to leave Hong-King owing to ill health.

J. P. Quigley, chief clerk to the assistant traffic manager of the Union Pacific, with headquarters at Los Angeles, Cal., has been promoted to assistant general freight agent, with the same headquarters, to succeed **J. L. Totten,** who has been transferred to San Francisco, Cal.

R. Campbell Kennedy, assistant general passenger agent of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at St. Louis, Mo., has resigned to become general manager of the Louisville Post and the Louisville Herald, newspapers published in Louisville, Ky.

J. D. Gowin, general agent of the Gulf Coast Lines, with headquarters in Chicago, has been appointed assistant general

agent of the Missouri Pacific, the Gulf Coast Lines, and the International-Great Northern, with the same headquarters. The appointment follows the consolidation of the offices of these lines under W. C. Staley, general agent of the Missouri Pacific.

A. F. Meyer, assistant general freight agent of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati, Ohio, has been promoted to general freight agent, with headquarters at Louisville, Ky. **J. H. Bauer** has been appointed chief of the tariff bureau, with headquarters at Cincinnati.

C. R. Petry has been appointed general agent of the Erie, with headquarters at St. Paul, Minn., to succeed **C. E. King,** who has been transferred to Milwaukee, Wis. **W. K. Vandiver** has been appointed general agent, with headquarters at Birmingham, Ala. **B. A. Rockwell** has been appointed general agent, with headquarters at St. Louis, Mo.

R. H. Vaughan, who has been promoted to general through freight agent of the Chesapeake & Ohio, with headquarters at Cincinnati, Ohio, was born on October 10, 1859, at Mobile, Ala. He entered railway service in 1880 as a bookkeeper in the accounting department of the Mobile & Ohio, and in 1883 he went to the Missouri Pacific as chief rate clerk at St. Louis, Mo. In 1886 he became general freight agent for the Cotton Belt at Texarkana, St. Louis, South Western, and in 1889 he went with the Mexican National as assistant general freight agent. A short time later he became general United States agent for the Monterey & Mexican Gulf, with headquarters at New York City, reporting to the banking house of J. W. Seligman & Co., which controlled the property. Mr. Vaughan was sent abroad by them during 1893 and 1894 to establish agencies. After the sale of the property to a Belgian syndicate, he entered the service of Missouri-Kansas-Texas as a commercial agent at St. Louis, and later became general eastern agent for the Chesapeake & Ohio "Blue Ridge Despatch," with headquarters at New York City. In 1903 he was promoted to general manager of the Blue Ridge Despatch, and since release from federal control he has been assistant general freight agent in charge of through traffic at Cincinnati.

R. H. Vaughan

Mechanical

H. Y. Harris has been appointed master mechanic of the Seaboard Air Line, with headquarters at Tampa, Fla. **W. A. King** has been appointed road foreman of engines, with headquarters at Wildwood, Fla.

Engineering, Maintenance of Way and Signaling

A. O. Wilson has been appointed division engineer of the Seaboard Air Line, with headquarters at Sebring, Fla.

W. E. Moran has been appointed engineer of fire protection of the Cleveland, Cincinnati, Chicago & St. Louis, succeeding **E. N. Floyd,** resigned.

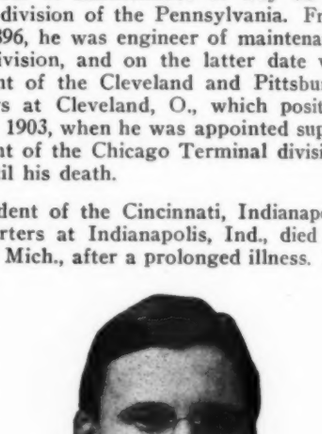
James MacMartin, chief engineer of the Delaware & Hudson, has been appointed chairman of the valuation committee, to succeed **George H. Burgess,** resigned. Mr. MacMartin will perform the duties of that office in addition to his regular duties.

Obituary

F. B. Ross, general agent of the Chicago Great Western, with headquarters at Dubuque, Ia., died on October 2.

William H. Scriven, general agent and superintendent of the Chicago Terminal division of the Pennsylvania, died on October 3, from injuries received when an automobile in which he was riding left the road and rolled down an embankment near Carbondale, Ind. He was born on March 18, 1860, and entered railway service in 1881 as a rodman on the Mexican National. From July, 1882, to April, 1886, he was in the employ of the Pennsylvania lines west of Pittsburgh as a transitman, and topographer with the chief engineer's corps. From April to July, 1886, he was assistant engineer of maintenance of way on the Little Miami division, and on the latter date was appointed division engineer on the construction of the Hamilton division, which position he held until December, 1886, when he was appointed engineer of maintenance of way of the Little Miami division. From December, 1888, to August, 1889, he was on furlough because of illness. Part of this time he acted as supervisor on the Monterey division of the Mexican National in Mexico. From August, 1889, to April, 1895, he was engineer of maintenance of way on the Cleveland and Pittsburgh division of the Pennsylvania. From April, 1895, to January, 1896, he was engineer of maintenance of way of the Eastern division, and on the latter date was promoted to superintendent of the Cleveland and Pittsburgh division, with headquarters at Cleveland, O., which position he held until December 21, 1903, when he was appointed superintendent and general agent of the Chicago Terminal division, which position he held until his death.

Fred Zimmerman, president of the Cincinnati, Indianapolis & Western, with headquarters at Indianapolis, Ind., died on October 5 at Battle Creek, Mich., after a prolonged illness. He was born on July 26, 1866, at Portland, Me., and entered railway service in 1882 as an office boy, after which he was successively promoted to various clerical positions in the freight department of several roads in Chicago and Detroit, Mich. After entering the service of the Michigan Central in the general freight department at Detroit in 1897, he was promoted to assistant general freight agent, with headquarters at Buffalo, N. Y., on October 1, 1899. He was transferred to Chicago on July 1 of the following year, where he remained until November 1, 1909, when he was appointed general freight agent of the Indiana Harbor Belt at Chicago. In addition to his duties on the Indiana Harbor Belt he was appointed general freight agent of the Chicago, Indiana & Southern on January 1, 1911, and was appointed general freight agent of the Lake Shore & Michigan Southern, with headquarters at Cleveland, O., in March, 1914. In November of that year he was elected vice-president in charge of traffic of the Chicago, Indianapolis & Louisville, with headquarters at Chicago. During the period of federal control he was traffic assistant for the Chicago Terminal District of the United States Railroad Administration and vice-chairman of the Traffic Division of the American Railway Association. He was re-appointed vice-president of the Chicago, Indianapolis & Louisville after the return of the railroads to private operation on March 1, 1920, and continued in that capacity until his election as president of the Cincinnati, Indianapolis & Western in November, 1923. He was also president of the American Association of Freight Traffic Officers from May 11, 1921, to September 21, 1925.



Fred Zimmerman